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APOLLO 11 PHOTOGRAPHY 70-mm, 16-mm, and 35-mm Frame Index

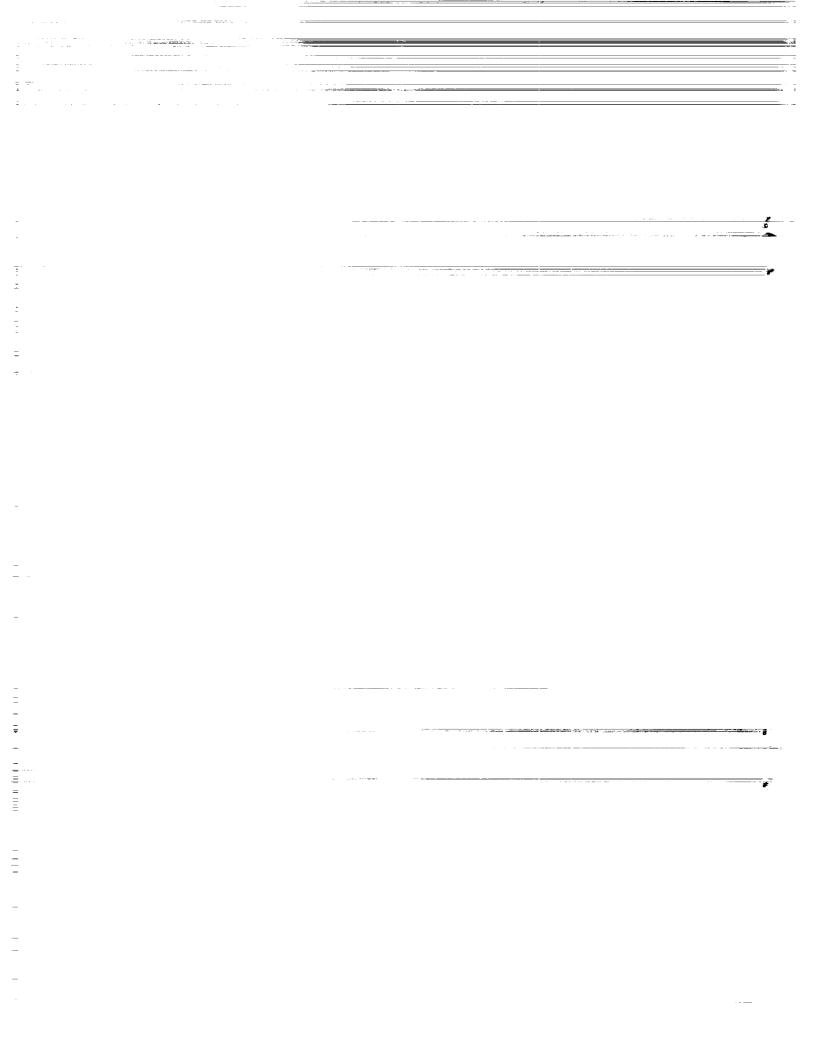
This Index contains supporting information about each photograph taken during the Apollo 11 mission, including those photographs taken of the earth. The photographs of the earth, however, are not available from the National Space Science Data Center (NSSDC).

Requests for earth photographs taken from Apollo 11 should be directed to: Technology Application Center, University of New Mexico, Albuquerque, New Mexico 87106 U.S.A.

NOTE: Please understand that this is a preliminary copy and may contain errors. This version has been forwarded to provide you with the data as quickly as possible.

Prepared by the
Mapping Sciences Laboratory
at the NASA Manned Spacecraft Center, Houston, Texas

PUBLISHED BY THE NATIONAL SPACE SCIENCE DATA CENTER
FEBRUARY 1970



Apollo 11 Photography

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APOLLO 11 HASSELBLAD PHOTOGRAPHY (70mm)

MAGAZINE N (Frames AS11-36-5291 thru Frames 5432)

Magazine N consists of 141 frames of color 70mm film. The major number of frames are of the translunar phase of the mission, with shots of the earth, capsule interiors and operational photographs.

The last twenty-eight frames of the magazine were of the lunar surface containing photographs of: craters IX, 204, 205, 207, 211, 216, 217, 220, 275, 282, 292 and targets of opportunity 30, 34, 46 and 50.

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Sheet 1 of 10 Sheets

APOLLO 11 HASSELBLAD FHOTOGRAPHY

Magazine N Film SO 368 Time Reference - GET = GMT = GMT

								 ,					—-		
Description	Spacecraft interior	Ε	Clouds	Ε	1	12		±	E	15	=======================================	П	п	=	
Direction Tilt															
Approx. Tilt min max			65 70	50 55	55 60	50 55	60 65	50 60	65 70	65 70	50 55	55 60	02 09	0/ 09	0/ 09
Photo Quality	Poor	n	#	11	11	H	#	Good	Poor	Good	11	11	11	=	11
Sun Angle H,M,L															
Fvd o/1 %															
ncipal Point Fwd t Long o/l P g deg % E										,					
Principa Lat deg															
Approx. Photo Scale															
Frame Camera # FL mm	80	Ξ	E	E	ı.	4	и	#	F	ı.	н	E	=	E	=
Frame #	5219	5292	5293	5294	5295	9679	5297	5298	5299	5300	5301	5302	5303	5304	5305

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

EME CENTE Magazine N Film SO 368 Time Reference - GET Color

Description	=		Е	=	אז א+ אי פעוזפ							Rarth shot	0.000	=	E
u,	-	-	-		T S		-		1	1 2	i	F G.		-	<u> </u>
Direction Tilt															
Approx. Tilt min max	50 60	65 70	1	02 09	1										
Photo Quality	Good	=	E	=	F	=	=	=	E	E	=	Poor	E	Good	E
Sun Angle i, M, L						†		 	+-						
P. C.					<u> </u>	-	 -	 	 	-	 	-	\vdash	-	
l Point Long deg															
Principal Point Fwd Sun Lat Long o/1 Angle deg deg % H,M,L															
Approx. Photo Scale															
Frame Camera # FL mm	&	=	E	E	E .	и	E .	ŧ	=	E	E	=	E	E	Ε
Frame #	5306	5307	5308	5309	5310	5311	5312	5313	5314	5315	5316	5317	5318	5319	5320

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

EW II Magazine N Film SO 368 Time Reference - GET _____

		7														_
Description	Earth shot	L.	2	=	#	E	8	STVR with IM in mlone	בינה של ידי הידים לידים	E	Earth shot		E	=	=	
Direction Tilt																-
Approx. Tilt min max																
Photo Quality	Good	Poor	Good	Ε	E	2	=	=	=	=	E	Ε	E	=	E	
Sun Angle H, M, L												-		 		-
Fvd 0/1 %									†	1	1	1	-	 	十	4
l Point Long deg																
Principal Point Fwd Sun Lat Long o/1 Angle deg deg % H,M,L												,				
Approx. Photo Scale																
Frame Camera # FL mm	8	ш	E	Ε	ı	E	£	=	E	E	E	ш		250	E	
Frame	5321	5322	5323	5324	5325	5326	5327	5328	5329	5330	5331	5332	5333	5334	5335	

APOLLO 11 HASSELBLAD PHOTOGRAPHY

EMT = Magazine N Film SO 368 Time Reference - GET _____

Description	Earth shot	E.	E	Earth shot, Central and North America	=	T.	E	E	п	L	ц	L	ш	п	æ
Direction Tilt															
Approx. Tilt min max															
Photo Quality	Good	ш	-	#	E	E	н	и	±	ŧ	ш	E	F	ŧ	E
Sun Angle H, M, L													·		
₹°0															
l Point Long deg															
Principal Point Fwd Sun Lat Long o/1 Angle deg deg % H,M,L															J
Approx. Photo Scale															
Frame Camera # FL mm	250	E	E	E	ŧ	E	E	E	Ε	E	F	ŧ	E	E	=
Frame	5336	5337	5338	5339	5340	5341	5342	5343	5344	5345	5346	5347	5348	5349	5350

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine N Film SO 368 Time Reference - GET = GMT Color

Description	Earth shot, North and Central	Earth shot, Africa and	Mediterranean area		Earth shot, Africa and	Arabian Penninsula Earth shot. Africe olonda	# 1	=	1				Docking target	208400	E	
Approx. Direction Tilt Tilt in max																
Approx. Tilt min max																7
Photo Quality	Good	E	=	ı.	E	=	=	E	=	E	=	E	=	E	E	
Sun Angle H,M,L												-				
Fd 0/1 %								-	†		 		 		 	
Principal Point Fwd Sun Lat Long o/1 Angle deg % H,M,L																
Approx. Photo Scale																
Frame Camera # FL mm	250	ŧ	=	E	E	E	E	E	E	E	E	ı.	80	=	E	
Frame #	5351	5352	5353	5354	5355	5356	5357	5358	5359	5360	5361	5362	5363	5364	5365	:

APOLLO 11 HASSELBLAD PHOTOGRAPHY

EST II Magazine N Film SO 368 Time Reference - GET ______ Color____

Description	Earth shot, North and South America	Ε	=	Е	L	Earth shot	E	п	11	Е	Earth shot, Africa, Arabian Penningula	u	u	μ	Earth shot, North and South America
Approx. Direction Tilt Tilt in max															
Approx. Tilt min max															
Photo Quality	Good	E	Ħ	Ħ	Ħ	н	ш	Poor	Good	E	ш	ш	u	E	E
Sun Angle H, M, L															
% d													Ţ		
ncipal Point Fwd Sun t Long o/1 Angle g deg % H,M,L															
Principa Lat deg												-			
Approx. Photo Scale															
Frane Camera # FL mm	250	F	ш	E	ŧ	E	E	"	ш	ш	E	и	E	E	E
Frame	5366	5367	2368	6965	5370	5371	5372	5373	5374	5375	5376	5377	5378	5379	5380

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

II G Film SO 368 Time Reference - GET Color Magazine N

		_	_		_																
Description	Earth shot Nouth and Court	America	Spacecraft interior	14		-	44	-	=		=			E	Spacecraft interior Aldmin	TITTE (101101)	=	E		:	E
Ulrection Tilt															· Phylipson				-		
													1							+	
Quality	Good	7000	Poor	E	Ε	=		E	Good		Fair	Good	-		=	=		E	E	-	
Angle H, M, L						1	1			+			+	\dagger		-	+			1	-
₹ 7%		T					1			\dagger			+-	+		-	+		<u> </u>	╀╌	┥
Long							1		-				T				\dagger			-	1
Lat deg							†							-							
Photo Scale																					1
FL mm	250	8	1	=	=	E	=	1	E	=		ŧ	=	=	1	<u> </u>	=	+	E	=	1
*	5381	5382	0.00	2885	5384	5385	5386		5387	5388		5389	5390	5391		5392	5393		5394	5395	1
	Photo Scale Lat Long o/1 Angle Quality Tilt Tilt deg deg % H,M,L min max	Photo Scale Lat Long o/l Angle Quality Tilt Tilt deg deg % H,M,L min max	Photo Scale Lat Long o/l Angle Quality Tilt Tilt deg deg % H,M,L min max Good Good Earth shot,	Photo Scale Lat Long o/l Angle Quality Tilt Tilt deg deg % H,M,L Good Good Poor	Photo Scale Lat Long o/l Angle Quality Tilt Tilt deg deg 4 H, M, L min max Poor	Photo Scale Lat Long O/1 Angle Quality Tilt Tilt deg deg % H,M,L min max Filt Filt Filt Filt Filt Filt Filt Filt	Photo Scale Lat Long O/1 Angle Quality Tilt Tilt deg deg % H,M,L min max Flor Poor Poor " " " " " " " " " " " " " " " " " "	Photo Scale Lat Long O/1 Angle Quality Tilt Tilt deg deg deg H,M,L min max Pior Poor " " " " " " " " " " " " " " " " " "	Photo Scale Lat Long O/1 Angle Quality Tilt Tilt deg deg deg # H,M,L min max Tilt Tilt Good Poor " " " " " " " " " " " " " " " " " "	Photo Scale Lat Long O/1 Angle Quality Tilt Tilt deg deg deg H,M,L min max Poor Poor " " " " " " " " " " " " " " " " " "	Photo Scale Lat Long O/1 Angle Quality Tilt Tilt deg deg deg # H,M,L Good Poor " " " " " " "	Photo Scale Lat Long O/1 Angle Quality Tilt Tilt deg 4eg 4H,M,L Good Good Foor " " " " " " " " " " " " " " " " " "	Photo Scale Lat Long O/1 Angle Quality Tilt Tilt deg deg deg H,M,L min max Tilt Tilt Tilt Tilt	Photo Scale Lat Long of Angle deg % H,M,L Angle deg % H,M,L Tilt Tilt Tilt Reg % H,M,L Good Foor "	Photo Scale Lat Long deg % H,M,L Approx. Direction Photo Scale Lat Long deg % H,M,L Tilt Tilt Rest Rest Rest Rest Rest Rest Rest Rest Rest Rest	Photo Scale Lat Long deg % H,M,L Approx. Direction Photo Scale Lat Long deg % H,M,L Tilt Tilt Poor " " " " " " " " " " " " Good " " " Good " " " " "	Photo Scale Lat Long of deg	Photo Scale Lat Long O/L Angle deg duality 4.M.L min max Lilt Tilt Tilt Reg % H,M,L min max Rood "	FL mm Photo Seale Lat Long 0,1 Angle quality Tilt Tilt	Photo Scale Lat Long deg % H,M,L denity min max min max Tilt Tilt	FL mm Photo Scale Let Long of Angle Quality Angle Quality Tilt Tilt

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine N Film SO 368 Time Reference - GET = GMT Color

Description	Spacecraft interior, Aldrin	Ĕ	£	T.	Earth shot	E	Earth shot, Africa, Arabian Penningula	IM, docking target	=	North of crater 292	In crater IX	NF of crater IX	North of crater 292	Crater IX, TO 34	South of crater 216
Direction Tilt										ស	EN	NE	S	NE	MN
Approx. Tilt min max										5 10	55 65	70 75	5 10	65 70	20 25
Photo Quality	Good	Ħ	u	n	Ħ	44	u	E	п	11	и	n	Ħ	ш	E
Sun Angle H, M, L										H1gh	u	ш	ш	E	E
										0	0	0	0	0	0
ncipal Point Fvd t Long 0/1 g deg %										139.5E	377L	150距	139E	139.5E	134E
Principal Lat deg										1.58	5.5N	N91	13	N6	1N
Approx. Photo Scale			-							000,047	854,300	1,250,000	000,044	1,126,100	478,000
Camera FL mm	80	#	н	F	250	=	E	80	и	250	£	н	и	п	ш
Frame #	5396	5397	5398	5399	2400	5401	2402	2403	7075	2075	9075	2707	2408	2409	5410

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

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Magazine N Film SO 368 Time Reference - GET = GMT Color

	# FL mm	Photo Scale	Frincips Lat deg	Incipal Point Fwd at Long 0/1 8		Sun Angle H,M,L	Photo Quality	Approx. Tilt min max	Direction Tilt	Description
5411	250	910,000	N9	143E	0	High	Fair	55 60	NE	Crater TX
5412		444,000	NZ.0	129.5E		=	E	ſ	SE	Fast of crater 282
5413	8	3,836,800	11N	141.5		=	=	65 70	NE	Crater IX. TO 30 & 37
5414	E	и	10N	147E		=	E	1	NE	=
5415	£					E	Good	70 75	NE	High oblique in vicinity of
5416	=	2,397,200	N7	134.5E		=	Fair	55 65	NE	Craters 216, 217 & IX, TO 30 & 34.
5417	=	pp in space				E	=	70 75	NE	=
5418	· E	3,253,500	1.5N	133.5E		=	=	1	凶	=
5419	=	880,100	5.5N	120.5E		=	=	45 55	WM	Crater 211, TO 46
5420	E	2,016,100	6.5N	121E	85	=	=	44 55	×	
5421	E	2,284,700	5.5N	120E	8	=	=		NE	Crater 211, 212 and 213 m0 14
5422	E	2,524,600	5N	120.5E	8	=	E	55 60	NE	OT 6712 print all
5423	E	678,600	2N	110.5E	0	=	Good	30 40	NE	Crater 20%
5424	E	=	1 N	112E	8	=	=	30 40	Æ	Crater 207
5425	=	3,028,700	11N	113E	0	=	Fair	60 65	EE	

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine N Film SO 368 Time Reference - GET = GMT Color

Description	Part of crater 275	Looking into crater 220	E	Too dark to locate	Crater IX, TO 30	South of crater 216	Crater 216					
Direction Tilt	SE	NE	妇		3	闰	NW					
Approx. Tilt min max	99	80	65		70	35	55			-		
	55	75	8		8	25	δ					
Photo Quality	Good	=	=	Poor	Good	E	E					
Sun Angle H, M, L	High	=	=		High	Ħ	n					
Fud 0/1 %	25				0	0						
L Point Long deg	11年		158E		139E	133E	131.5E					
Principal Point Fwd Sun Lat Long o/1 Angle deg deg % H,M,L	18		5N		N5.9	1 N	Nε					
Approx. Photo Scale	807,900	700,000	1,041,100		513,300	ш	731,100					
Frame Camera # FL mm	250	ш	2		250	¥	ш					
Frame #	5426	5427	5428	5429	5430	5431	2435	END				

MAGAZINE O

(FRAMES AS11-38-5556 THRU 5689)

Magazine "O" contains photography of the backside with a short sequence in the Sea of Fertility and another sequence extending into the nearside terminator. There are several shots of the moon and the earth taken after Transearth Insertion. This magazine was photographed with a 250 mm lens. Target of Opportunity 137 was photographed on frames 5605-5608.

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine 0 Film 3400 Time Reference - GET = GMT - FAW

TO 19 308 Southern portion Crater Description horizon horizon East rim Crater 302, West rim Crater 305 38 South of Crater 225 East rim Crater 305 West of Crater 308 South of Crater Into Crater 308 op Crater 307 on Lunar farside Lunar farside Lunar farside 305 Crater 302 Crater Direction Tilt 띬 \mathbb{S} 띬 3 S 3 SE 띬 ß S 욠 ഗ Ø S ß Approx. Tilt mind BBx 75 65 85 2 3 9 55 55 55 65 9 9 65 65 2 2 8 65 55 55 ß 20 δ 3 55 65 9 55 8 8 Photo Quality Good Fair Good = = = = = = = = = F = Angle H, M, L Sun Med = = = = = = = = = = = = = = °√ √ √ √ Principal Point Fwd 163.5E 178.5E Long deg 159.5E 169.55 172E 172E 179E 179E 179E 175E 173E 173E 173E space space ui dd pp in 7.58 2.08 8.58 7.58 7.58 **8.**5S ß ഗ S ß 17.58 ß S Lat deg 72 9 ~ ~ 2 ~ Approx. Photo Scale 1,174,600 1,174,600 830,300 969,200 969,200 731,100 830,300 969,200 830,300 = = = Camera 250mm FL III = = = = = = = = = = = = = = Frame 5556 5558 5559 5560 5564 5570 5557 5561 5562 5563 5565 5566 5567 5568 5569 *

APOLLO 11 HASSELBLAD PHOTOGRAPHY

B&V

Description	Crater 302	West of Crater 299		NE rim Crater 297	Floor Crater 297	West rim Crater 297	West of Crater 297	East of Crater 292	North of Crater 292		West of Crater 292	Between Craters 305,308	Crater 304	North of Crater 304	Crater 302
Direction Tilt	S	တ	S	SE	MS	ഗ	മ	MS	υ	တ	MS	SE	MS.	တ	S
Approx. Tilt min max	65 70	20 25	20 25	45 50	9 09	55 60	45 50	25 30	35 40	35 40	50 55	65 70	65 70	35 40	65 70
Photo Quality	Good	E	E	=	=	ш	=	F	=	ш	u	ш	E	п	н
Sun Angle H, M, L	Med	ш	E	£	ı.	Ħ	Ε	E	±	u	ı		E	u	£
										30					
og it	SE.	Œ	田	囝	田	闰	5E	闰	5E	5E	臼	臼	闰	闰	臼
Point Long deg	160.5E	153.5E	152	151	150	149	144.5E	143	139.5E	138.5E	138	173	166	167	164
Principal Point Fwd Lat Long 0/1 deg %	11.58	2 S	2 · S	4 S	6 S	6.58	4.58	2 8	1.58	1.58	4 S	8 9	s 9	2 3	8 9
Approx. Photo Scale	1,174,600	485,500	E	622,200	969,200	830,300	622,200	493,800	550,900	и	731,100	1,174,600	u	55,900	1,174,600
Frane Camera # FL mm	250	=	E	=	=	E	Ε	E	E	=	=	=	E	=	=
Frame	5571	5572	5573	5574	5575	5576	5577	5578	5579	5580	5581	5582	5583	5584	5585

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

	т	γ —	_			γ	т								
Description	Southwest of Grater 303	Crater 301	Crater 301	Crater 297	NE rim Grater 297	1	South of Trater 218	North of Crater 292	=======================================	West of Crater 292	Foaming Sea	North of Foaming Sea	Foaming Sea	Webb E, Appolonius G	Messier, Messier A, D
Direction Tilt	SE	တ	တ	MS	SE	SE		MS	MS	MS	M	MM	NW	MN	MS
Approx. Tilt min max	45 50	57 07	35 40	02 09	72 50	72 50	0 5	35 40	35 40	45 55	65 75	65 75	02 59	50 55	35 45
Photo Quality	Good	Е	£	E	£	=	п	Ħ	ŧ	±	н	н	#	ŧ.	=
Sun Angle H, M, L	Med	44	"	E	Ξ		E	=	u	£	ı	E	±.	ı.	E
								52	50						
cipal Point Fwd Long o/1 deg %	161 E	159 E	158 E	152 E	151 E	151 E	145.5E	139.5E	139 E	133 E	zon	uoz	64 E	64 E	47.5E
Principa] Lat deg	3 S	4 S	3 S	s 7	k S	4 S	0	1.58	1.Æ	4 S	on horizon	on horizon	2 N	1 N	2 8
Approx. Photo Scale	645,200	601,600	550,900	969,200	645,200	Ε	009,077	550,900	=	645,200			=	731,100	583,000
Frame Camera # FL mm	250	E	=	E	=	=	Ε	=	=	=	=	Ε	=	=	F
Frame #	5586	5587	5588	5589	5590	5591	5592	5593	5594	5595	5596	5597	5598	5599	2600

APOLIO 11 HASSELBLAD PHOTOGRAPHY

B&W

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MAGAZINE P

(Frames AS11-41-5971 Thru Frames 6159)

Magazine "P" is 70mm black and white photography of the lunar surface taken from the Command Module at approximately 60 nautical mile orbital altitude. The first 132 frames are sequential high obliques with 90-98% forward overlap. The west looking sequence starts near 140° east longitude at the equator and continues to the nearside lunar terminator at 15° east. An 80mm lens was used. The following targets of opportunity were at least partially imaged: To #34, #67, #80, #84, and #115. Landing Site 2 is also covered by this magazine.

The next 24 frames are a 250mm west looking oblique sequence, commencing at 35° east and continuing to the nearside terminator. Photographic targets of opportunity #80 and #132 are partially imaged.

The remaining frames are south looking obliques, taken on the farside of the moon with a 250mm lens. Target of opportunity #15 is imaged several times. Crater #208 is also covered.

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

	T	CV.	R	T	Ţ	T-	Т	T	T	Т	T^-	T	T	1	T
Description	Not plotable	Oblique Sequence Frames 5972 to 6104	Im of Bay		Ε	Ε	Partial of TO 34	West of TO 34	Crater 216	West of crater 216	East of crater 282 CP 10-1	Crater 282 CP 10-1	Crater 282 (North of TO 43)	£	E
Approx. Direction Tilt Tilt in max			MN	NN	NW	MN	MN	MN	A	3	3	2	3	3	М
Approx. Tilt min max			8	8	85	80	88	8	8	85	8	85	85	85	85
Ħ			85	8	8	2	2	75	75	8	75	8	8	8	8
Photo Quality			Poor	Ε	Fair	Fair	=	E	=	=	±	ı.	E	E	E
Sun Angle H, M, L			Med	E	E	E	High	E	=	=	=	=	=	=	=
F.d 0/1 %			06	95	95	95	93	6	35	93	95	95	76	95	95
1 Point Long deg			Horizon 90	E	E	E	E	±	=	E	=	=	E	=	E
Principal Point Fwd Lat Long o/1 deg deg %			Ароте	E	E	=	ŧ	E	E	ш	E	E	E	ŧ	E
Approx. Photo Scale															
Frame Camera # FL mm			80	n	E	E	±	E	E	E	E	=	=	=	E
Frame #	5971		5972	5973	5974	5975	9265	5977	5978	5979	5980	5981	5982	5983	2984

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

				1	Ι	1	Γ	Γ		Τ	Τ	1	Υ		П
Description	Crater 211 (TO 46)	ш	и	u	u	E	East of crater 206	-	Cratera 206, 207, 275 (South of TO 50)	-	2	E	Craters, 206, 207, 275, 204	Craters 204, 201, 202	Craters 204, 202
Direction Tilt	М	М	M	M	×	M	138	M	7	м	М	3	B	38	W
Approx. Tilt min max	80 85	75 80	75 80	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	79 81	80 85	80 85	80 85
Photo Quality	Fair	н	н	ш	ш	н	н	£	Ξ	E	E	E	ц	н	ш
Sun Angle H,M,L	94 High	E	u u	u	ш	u	Ľ	11	н	E	E	=	H	11	=
	76	95	95	95	95	76	92	93	93	76	95	96	95	95	95
cipal Point Fwd Long o/1 deg %	Horizon	F	n	n	E	ŧ	ı.	н	H	н	н	E	ш	н	E
Prin Lat deg	Above	E	n	n	E	E		#	н	E	u	ш	ll	#	Ε
Approx. Photo Scale															
Camera FL mm	80	E	E	Ε	E	Ε	=	Ξ	E	I	±	E	£	=	E
Frame	5985	59 8 6	5987	5988	5989	5990	5991	5992	5993	7665	5665	9665	5997	5998	5999

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Magazine P Film 3400 Time Reference - GET = GMT

	T		_	_	_	_								_	
Description	Crater 202		E	Craters 199, 270	E	=	T.	Craters 269, 195 (TO 55)		E	Crater 269	Craters 192, 189, 267	ш		Craters 267 and 189
Direction Tilt	М	M	¥	3	м	3	3	3	3	3	3	3	3	3	М
Approx. Tilt min max	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85
Photo Quality	Fair	ŧ	=	£	ŧ	£	=	Ε	ŧ	=	=	=	E	=	u
Sun Angle H, M, L	95 High	E	E	ŧ	=	E	=	=	=	-	=	=	Ε.	=	=
Fvd 0/1 %	lli	95	95	95	95	95	95	95	95	95	95	95	8	8	8
l Point Long deg	Hori zon	E	E	¥	u	E	E	E	E	E	=	=	F	=	E
Principal Point Fwd Lat Long 0/1 deg deg %	Ароте	E	E	t t	E	ш	ŧ	ш	ш	E	E	Ε	E	=	E
Approx. Photo Scale															
Frame Camera # FL mm	80	Ħ	=	=	=	E	£	E	E	E	ı	£	±	E	Ε
Frame #	0009	6001	6002	6003	7009	6005	9009	4009	8009	6009	6010	6011	6012	6013	6014

APOLLO 11 HASSELBLAD PHOTOGRAPHY

Description	Crater 189	-	A The Control of the	Crater 189	=	Smyths Sea/orater 189			Smyths Sea	=	=	=======================================	Smyths Sea/crater Neper K		
Direction Tilt] \$	M	28	≯	M	A	В	3	А	3	23	73	;3	;=	33
Approx. Tilt min max	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85
Photo Quality	Fair	Ε	ŧ	Ε.	Good	£	Ε	E	E	£	£	E	£	E	н
Sun Angle H, M, L	97 High	E	E	E	E	=	=	E	F	F	E	E	=	E	ш
15 %		98	26	16	98	26	26	16	8	97	*	8	%	%	96
1 Point Long deg	Horizon	E	±	E	ш	ш	£	=	E	н	н	н	E	H.	E
Principal Point Fwd Lat Long 0/1 Let deg deg % I	АЪоте	R.	£	£	Ħ	£	E	E	E	ш	H	H.	u	ш	и
Approx. Photo Scale															
Frame Camera # FL mm	80	E.	n	E	=	E	E .	£	ŧ	E	Ė	E	E	±	E
Frame #	6015	6016	6017	6018	6019	6020	6021	6022	6023	7709	6025	6026	6027	6028	6059

APOLLO 11 HASSELBLAD PHOTOGRAPHY

							_								
Description	Smyth's Sea	±	Smyth's Sea/Schubert	П	Crater Schubert	Crater Banachiewicz	=	Gilbert M. Schubert F	=	Gilbert, Schubert Y and G	Schubert N. Dubiago C	=	Maclaurin L. Dubiago	Dubiago. Dubiago B	-
Direction Tilt	33	м	М	3	N	3	3	:3	3	3	33	3	3	3	3
Approx. Tilt min max	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85
Photo Quality	Good	=	E	E	=	E	E	E	=	E	E	=	=	=	=
Sun Angle H, M, L	High	E	E	E	E	E	=	E	=	=	=	E	=	=	E
	96	96	95	95	97	26	95	95	8	8	95	96	95	95	8
l Point Long deg	Horizon 96	E	u	E	E	ı	=	=	=	=	E	£	=	=	E
Principal Point Fwd Lat Long 0/1 deg deg %	Ароте	Ħ	Ħ	ı.	E	E	E	=	=	E	E	=	=	E	=
Approx. Photo Scale															
Frame Camera # FL mm	80	=	Ε	=	=	=	E	E	E	E	E	=	Ε	E.	=
Frame #	6030	6031	6032	6033	96034	6035	9609	6037	8609	6039	07/09	6041	2709	6709	77/09

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Description	Dubiago, Dubiago B	Maclaurin	E	Mare Spumans	ŧ	Mare Spumans, begining of TO 67	E	E	TO 67, Apollonius	TO 67, Apollonius G	Mare Fecunditatis, TO 67	Ε	=	E	±
Direction Tilt	М	M	M	М	Μ	W	*	14	M.	3	М	М	A	М	м
Approx. Tilt min max	80 85	80 85	80 85	80 85	80 85	75 80	75 80	75 80	75 80	75 80	75 80	75 80	75 80	75 80	75 80
Photo Quality	Good	u	ŧ	п	E	E	ш	ш	E	н	=	E	=	u	¥
Sun Angle H, M, L	95 H1gh	ŧ	E	E	E	E	¥	E	E	=	E	E	=	u	E
Fvd 0/1 A		776	96	8	96	%	96	96	76	95	96	96	35	95	95
oint ong leg	Horizon	E	E	E	ŧ	E	ш	u	E	ŧ	Ħ	£	E	E	±
Principal F Lat I	Ароте	=	=	E	E	n	ш	¥	F	E .	E	ı.	=	п	11
Approx. Photo Scale															·
Camera FL mm	80	ш	ŧ	E	ш		ŧ	Ε	E	±	Ε	=	ŧ	=	ı
Frame #	9709	97/09	2709	87709	6709	6050	6051	6052	6053	7509	6055	9509	2509	8509	6909

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

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Description	Mare Fecunditatis, TO 67	Е	Е	1	1	E	E	1	=	End of TO 67	Mare Fecunditatis. Secchi K		TO 80		TO 80, 84
Direction Tilt	3	A	М	A	A	3	Z	3	73	170	Z	73	3	3	W
Approx. Tilt min max	75 80	75 80	75 80	75 80	75 80	75 80	70 75	70 75	70 75	70 75	70 75	70 75	70 75	70 75	70 75
Photo Quality	Good	=	E	=	=	=	=	=	=	=	=	=	=	=	E
Sun Angle H, M, L	High	E	=	=	E	E	=	=	=	=	E	=	E	=	E
	1 - 1	95	76	76	26	76	35	95	%	35	8	95	95	93	35
l Point Long deg	Horizon 95	u	L L	=	E.	ŧ	*	E	=	E	=	£	E	=	=
Principal Point Fwd Lat Long 0/1 deg deg %	Above	E	и	n	н	E	H	=	=	E	=	н	E	=	£
Approx. Photo Scale															
Frame Camera # FL mm	80	Ξ	E	E	±	=	Ε	E	E .	u.	E	E	£	=	E
Frame #	0909	6061	6062	6963	7909	6065	9909	2909	8909	6909	0/09	1209	6072	6073	7/09

APOLLO 11 HASSELBLAD PHOTOGRAPHY

		Γ		Γ	1	1	Ī	Γ	T	Γ	Γ	П	Г	Г	
Description	TO 80, 84	£	E	E	E	TO 80, Mare Tranquilitatis	E	=	E	1	Ξ	=	End TO 80	Beginning TO 115	TO 115. Landing Site 2
Direction Tilt	M	M	М	M	М	Þ	3	В	A	×	:3	×	3	;3	74
Approx. Tilt min max	70 75	70 75	70 75	70 75	70 75	70 75	70 75	70 75	70 75	70 75	75 80	75 80	75 80	75 80	75 80
Photo Quality	Good	П	ш	Ħ	ш	ш	н	E	E	н	14	ш	ŧ	u	±
Sun Angle H, M, L	High	ш	Ε	E	u u	=	E	ш	ε		±	E	u	£	E
FVd 0/1	91	95	97	8	%	76	8	8	8	92	95	8	8	8	95
incipal Point Fwd at Long o/1 A	Horizon 91	E	н	E	ı.	E	E	ш	ш	±	u	ш	±	E.	¥
Principa Lat deg	Above	n	и	n	#	H.	n	E	44	E	E .	E	E		E
Approx. Photo Scale															
Frame Camera # FL mm	80	E	=	£	E	=	E	ŧ	=	F	E	E	E	=	F
Frame #	6075	9209	2209	8/09	6209	0809	6081	6082	6883	7809	6085	9809	4809	8809	6809

APOLLO 11 HASSELBLAD PHOTOGRAPHY

		_				_					_				_
Description	TO 115, Landing Site 2	#	End TO 115	North of TO 115	Sabine, Ritter, Delambre	E	Ritter, Delambre	Delambre, Dionysius	Theon Jr and Sr, Dionysius	Theon Sr	Nearside terminator	=	=======================================	=	End of oblique sequence
Direction Tilt	M	М	M	М	М	М	М	3	3	73	×	3	3	В	73
Approx. Tilt min max	75 80	75 80	75 80	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	80 85	+85
Photo Quality	Good	±	н	ш	н	п	и	u	Fair	ш	u	Poor	ш	и	E
Sun Angle H,M,L	High	Med	ı.	Ħ	=	E	Low	=	E	E	=	E	E	£	=
Fvd 0/1 %	35	%	93	95	95	95	95	76	95	6	95	95	95	95	95
l Point Long deg	Horizon	E	E	=	B	£	E	ŧ	=	E	#	E	ш	¥	E
Principal Point Fwd Lat Long 0/1 deg deg %	Above	=	E	=	E	E	=		E.	ı.	.=		ŧ	±	=
Approx. Photo Scale															
Frame Camera # FL mm	80	Ε	F	=	F	=	E		=	=	=	=	E	=	F
Frame #	0609	1609	6092	6093	7609	9609	9609	1609	8609	6609	6100	6101	6102	6103	6104

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Description	Darkness, not plotable	E	E	Begin 250 mm oblique sequence	Partial TO 80, Maskelyne A	Partial TO 80	Maskelyne	Maskelyne B	11	tt	Mare Tranquilitatis	Landing Site 2	ħ	п	u
Direction Tilt		1			М	A	М	М	М	М	м	М	M	М	м
Approx. Tilt min max					9 09	60 65	69 65	9 09	9 09	65 70	65 70	65 70	65 70	65 70	65 70
Photo Quality					Fair	п	и	ш	н	Good	11	н	ш	n	44
t Fwd Sun o/1 Angle G					High	и	E	E	E	Med	ш	2	£	t	E
F.d 0/1					0	08	1.1	83	8	80	85	85	80	83	85
ncipal Point Fwd t Long 0/1 g deg %			-		32.5E	31.5E	30.5E	29E	28.5E	26.5E	25.5E	24.5E	23.5E	22.5E	21E
Principa] Lat deg					1N	1N	. 5N	Νl	N L	1 N	N1	N1	N1	N L	1 N
Approx. Photo Scale					1,041,100	=		E	1,126,100	=	=	=	E	F	н
Frame Camera # FL mm	80	=	E		250	ı	=	=	E	=	ш	E	E.	F	E
Frame	6106	6107	6108		6109	6110	6111	6112	6113	6114	6115	6116	6117	6118	6119

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine P Film 3400 Time Reference - GET = GMT =

Description	Sabine, Ritter	=	11	ш	Ritter, Schmidt	Start TO 132	u	E	==	E	Ε	=	Start TO 132, Godin	Near side terminator	Darkness, not plotted
Direction Tilt	М	М	М	М	М	м	М	М	М	М	М	М	М	М	
Approx. Tilt min max	65 70	65 70	65 70	65 70	65 70	02 59	65 70	65 70	65 70	65 70	70 75	70 75	70 75	72 75	
Photo Quality	Good	H	n	t.	u	и	н	ш	u.	u.	Fair	ı.	ш	u	
Sun Angle H, M, L	Med	E	Low	u	E	u	#	u	E	E	H	ш	ш	±	
	85	86	\$	85	98	88	85	85	85	85	85	85	85	85	
l Point Long deg	19.5E	18.5E	18E	17E	16E	15E	14E	13E	12E	11E	less			н	
Principal Point Fwd Lat Long 0/1 deg deg %	1 N	1N	1 N	1 N	1N	1N	1N	.5N	.5N	. 5N	In darkhess	E	E .	н	
Approx. Photo Scale 1:	1,126,100	Ħ	и	и	ш	и	1,227,800	II.	E E	E	1,351,500	ŧ	1,500,000	1,650,000	
Frame Camera # FL mm	250	=	и	н	E	ш	=	E	±	E	Ξ	Ε	E	=	E
Frame #	6120	6121	6122	6123	6124	6125	6126	6127	6128	6129	6130	6131	6132	6133	6134

APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine P Film 3400 Time Reference - GET = GMT

Description	Darkness, not plotted	Farside terminator, not plotted	Not plotted	TO 15	=======================================	E	=======================================	E	E E		E	Near TO 15	-	North of crater 308	=======================================
Direction Tilt				တ	SE	ഗ	တ	တ	တ	ß	ഗ	တ	တ	တ	S
Approx. Tilt min max				50 70	50 60	02 09	50 60	45 50	45 50	40 45	50 55	9 09	50 55	35 40	25 30
Photo Quality				Fair	=	E	=	=	=	E.	=	E	=	ш	ш
Sun Angle H, M, L				Low	=	E	£	E	=	L	E	z	E	E	=
				0											
ncipal Point Fwd t Long 0/1 g deg %				172W	MS-721	175.5W	M521	175.5W	176W	176W	177.54	176.W	177.54	179W	179W
Pri La de				118	S9	8.5N	3.58	3.58	S 1 7	3.58	4.58	8.55	5.58	38	25
Approx. Photo Scale 1:				800,000	767,100	1,041,100	699,200	622,200	и	583,000	699,200	904,600	699,200	537,100	785,500
Frame Camera # FL mm	250	ш	=	=	±	E	£	=	E	=	E	£	=	E	E
Frame #	6135	6136	6137	6138	6139	6140	6141	6142	6143	6144	6145	6146	6147	6148	6149

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine P Film 3400 Time Reference - GET = GMT

Description	North of crater 308	Crater 308	1	E	North of crater 308	West of crater 308	E	E	Ε	=			
	Nor	Cra			Nort	West							
Direction Tilt	ಬ	တ	SE	တ	SE	ಜ	ώ	တ	SE	S			
	50	99	2	99	50	70	2	8	3	8			†
Approx Tilt min max	45	55	65	55	45	65	9	52	8	3			
Photo Quality	Fair	E	и	ш	E	E	E	Ε	E	E			
Sun Angle H, M, L	Low		E	E	Med	=	E	=	E	=			
Fvd o/1													
L Point Long deg	179.5	180W	179.5	179E	177.5	174E	175E	173.5	172E	170E			
Principal Point Fwd Lat Long o/1 deg deg \$	S [†] 7	6.55	9.58	5.58	3.58	118	8.58	7.5	S†7	3.58			
Approx. Photo Scale 1:	622,200	767,100	1,041,100	767,100	622,200	1,041,100	009,706	E	699,200	622,200			
Frame Camera # FL mm	250	=	=	=	=	-	-	E	=	=			
Frame #	6150	6151	6152	6153	6154	6155	6156	6157	6158	6159			

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MAGAZINE Q (Frames AS11-5737 thru 5843)

Magazine Q contains photography of the Tranquility Base with several shots around the landing area. The magazine was photographed with two different lens, 80mm and 60mm. The 60mm had a reseau image on the lens.

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

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Description	Shadow of IM on lunar surface	Part of LM leg shadow on	Shadow of thruster on surface	Shadow of IM on surface	Е	Lunar surface, taken from IM	ш	н	Thruster and liner enreece		ш	Lunar surface taken from IM	Shadow of IM on lune.	n Tural Surrace	E
Approx. Direction Tilt Tilt in max															
Approx. Tilt min max	Low	=	=	Med	ı.	=	E	=	E	=	=	=	=	=	=
Photo Quality	Fair	E	=	E	E	E	E	=	=	=	=	=	=	=	=
Sun Angle H, M, L	Low	=	=	=	=	=	Ε	=	=	=	E	=	=	=	E
\$ 77 %								<u> </u>	 				 	+-	
Point Long															
Principal Lat deg															
Approx. Photo Scale															
Frame Camera # FL mm	80	=	ш	E	=	=	÷	E	=	ŧ.	£	E	E	99	E
Frame #	5737	5738	5739	5740	5741	57.42	57.43	5744	57.45	97125	5747	57.48	5749	5750	5751

APOLLO 11 HASSELBLAD PHOTOGRAPHY

= GMT Film SO 3400 Time Reference - GET Black and White Magazine 0

Description	Lunar surface taken from LM	Part of thruster and lunar surface	Ε	=	Lunar surface from LM	-	E	Thruster and lunar surface taken from IM	Thruster shadow and surface taken from LM	Shadow of LM Leg on Lunar surface	Shadow of IM on surface	11	ц	12	Thruster/surface
Approx. Direction Tilt Tilt															
Approx. Tilt min max	Мед	H.	ш	11	ıı	11	и	Ħ	ш	и	ŧ	11	н	и	E
Photo Quality	Fair	ŧ	н	ш	Good	E	Fair	E	£	Good	11	Fair	E	ш	=
Fvd Sun o/1 Angle % H,M,L	Low	=	=	¥	=	E	E	E	E	=	u	ш	=	t	£
Fvd 0/1															
oint ong															
Principal F Lat I															
Approx. Photo Scale															
Camera FL mm	09	E	=	=	99	Ε	E	E	=	E	=	=	=	E	Ε
Frame (#	5752	5753	5754	5755	5756	5757	5758	5759	2760	5761	5762	5763	5764	5765	5766

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Description	Thruster/surface	ii.	ii	·	IM shadow/surface	и	ü	IM shadow/thruster/surface	LM shadow/surface	IM shadow/thruster/surface	ш	=	LM shadow/surface	LM shadow/thruster/surface	F
Direction Tilt															
Approx. Tilt min max	Med	E	E	11	=	ш	ш	ш	н	и	н	#	и	и	±
Photo Quality	Fair	и	11	Good	ll	н	#	11	Fair	Good	ŧ.	L L	ц	11	=
Sun Angle H, M, L	Low	=	11	11	11	ı	11	u	11	н		=	п	ı.	F
Fwd 0/1 %															
ncipal Point Fwd Sun t Long 0/1 Angle g deg % H,M,L															
Pri La de												-			
Approx. Photo Scale															
Frame Camera # FL mm	60	=	E	ŧ.	u	ŧ	ш	и	и	n	ш	н	н	ш	ш
Frame #	5767	5768	6915	5770	5771	5772	5773	5774	5775	5776	5777	5778	5779	5780	5781

APOLLO 11 HASSELBLAD PHOTOGRAPHY

= CMT Film 3400 Time Reference - GET Black and White Magazine Q

Description	IM shadow/thruster/surface	=	IM thrusters/surface	LM shadow/thrusters/surface	IM shadow/surface	Ε	E	=	Ξ	Ε	E	Lunar surface	Thrusters/reflector/surface	LM shadow/surface	Lunar surface
Direction Tilt															
Approx. Tilt min max	Med	ŧ	=	Ξ	u.	¥	£	п	=	E	E	ŧ	11	u	E
Photo Quality	Fair	E	Ε	E	н	u	±	#	=	Ξ.	Poor	11	Good	#	п
Sun Angle H, M, L	Low	=	ш	ŧ	ı.	E	E	±	ı	, E	E	ı	ш	E	Ħ
Fvd o/1															
ncipal Point Fwd Sun t Long o/1 Angle g deg % H,M,L							**								
Principa Lat deg												-			
Approx. Photo Scale															
Camera FL mm	09	=	E	=	Ξ	Ħ	=	Ε	E	E	80	Ξ	E	=	=
Frame#	5782	5783	5784	5785	5786	5787	5788	5789	5790	5791	5792	5793	5794	5795	5796

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

	Τ	Т-		_	-	$\overline{}$	¬-	<u> </u>			-1				
Description	Thrusters/reflector	IM shadow/surface	=	ш	IM thrusters/surface	IM shadow/flag/thruster/sur-	Tace	LM shadow/flag/surface	LM shadow/surface	=	Thrusters/flag/TV/surface	5) =	E	E	Flag shadow/LM shadow/surface
Direction Tilt											 				
Approx. Tilt min max	Low	=	E	=	=	=	=	E	=	E	=	=	=	=	=
Photo Quality	Good	E	E	E	=	=	=	=	E .	E	E	E	E	=	=
Sun Angle H, M, L	Low	=	=	=	=	=	=	=	=	=	=	=	=	=	=
Fvd 0/1 %									 	1	 		-	 	
l Point Long deg															
Principal Point Fwd Sun Lat Long 0/1 Angle deg deg % H,M,L															
Approx. Photo Scale															
Camera FL mm	80	E	F	E	=	£	ŧ	E	ε	=	E	=	E	=	E
Frame (#	5797	5798	5799	5800	5801	5802	5803	5804	5805	9085	5807	5808	5809	5810	5811

APOLLO 11 HASSELBLAD PHOTOGRAPHY

Description	IM shadow/surface	E	Flag/LM shadow/surface	Flag/thruster/IM shadow/TV/ surface	E	IM thrusters/TV/surface	п	IM shadows/thrusters/flag/ IV/surface	=	LM shadow/flag/surface	LM shadow/flag shadow/surface	LM shadow	LM shadow/surface	£	=
Direction Tilt															
Approx. Tilt min max	Low	E	ŧ	E	E	=	E	E	=	=	E	£	£	E	E
Photo Quality	Fair	=	Good	E	11	ш	E	=	=	=	E	11	4	u	=
Sun Angle H, M, L	Low	-	ı.		E	E	E	E	ш	ы	11	н	п	IJ	н
Poin Long deg															
Principal Lat deg															
Approx. Photo Scale															
Camera FL mm	8	=	E	Ε	=	=	=	=	=	=	=	=	=	E	=
Frame #	5812	5813	5814	5815	5816	5817	5818	5819	5820	5821	5822	5823	5854	5825	5826

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Description	LM shadow/surface	LM shadow/flag shadow/surface	LM shadow/flag/surface	LM shadow/thruster/flag/TV/	Thruster/flag/TV/surface	LM shadow/surface	=	LM shadow/flag shadow/surface	Flag/thruster/TV/surface	LM shadow/surface	=	E	LM shadow/flag/surface	Thrusters/reflector/seismo-	000110011000
Direction Tilt															
Approx. Tilt min max	Low	#	п	ı.	E	=	=	E	E	E	E	.=	E	E	±
Photo Quality	Good	11	и	ŧ		E	E	=	±	Fair	E	Ε	E	Poor	Fair
Sun Angle H,M,L	Low	ш	Ε	£	E	=	=	E	=	=	=	=	F	=	=
1 Point Long deg															
Principal Point Fwd Lat Long 0/1 deg &						ļ									
Approx. Photo Scale															
Camera FL mm	8	E	E	F	Ε	=	11	ш	11	H	и	ш	н	=	=
Frame (#	5827	5828	5829	5830	5831	5832	5833	5834	5835	5836	5837	5838	5839	0785	5841

APOLLO 11 HASSELBLAD PHOTOGRAPHY

L	Thrusters/reflector/seismo- meter/surface	=							
Direction Tilt									
Approx. Tilt min max	Low	ш							
Photo Quality	Fair	П							
Sun Angle H, M, L	Том	Į.							
F. 0									
Long deg			į						
Principal Point Fwd Lat Long o/1 deg deg \$									
Approx. Photo Scale									
Frame Camera # FL mm	80	ш							
Frame #	2842	2843							

TJ-2007

MAGAZINE R (Frames AS11-37-5433 thru 5555)

Magazine R contains photographs taken from the LM. Frames 5433 thru 5448 are taken from orbital altitude with the CSM visible over the lunar surface in frames 5443-5448. The remainder of the frames are photographs of the lunar surface from the LM at Tranquility Base.

All photographs were taken with an 80mm lens. Partial coverage of Targets of Opportunity 67 and 115 were taken on frames 5436 and 5437.

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

= GMT Film SO 168 Time Reference - GET Color Magazine R

Description	High oblique view centered on Crater 218	Earth view and part of LM	E	Very high oblique of lunar surface, part coverage of TOS	Oblique towards Tranquility Base, part coverage of TO 115	Unidentified photo in darkness	High oblique - lunar horizon- earth - LM	=	==	=	CSM over east Mare Fecunditatus	H.		CSM over east Sea of Tranquility	CSM over west Sea of Tranquility
Direction Tilt	MM				М						N	N	N	N	М
Approx. Tilt min max	60 65			80 85	60. 65		80 85	80 85	75 80	85 90	5 10	5 10	5 10	10 20	5 10
Photo Quality	Fair	Good	=	Fair	Good	Poor	н	ш	=	Fair	poog	ш	ŧ	u.	E
Sun Angle H,M,L	High			High	Low	Dark	High	=	E	E	Med	E	=	E	Low
l Point Long deg	146.0E				24.5E						57.5E	54.0E	51.0E	38.0E	23.5E
Principal Point Fwd Lat Long 0/1 deg deg %	4.0N				0.2N						1.5N	1.5N	1.0N	1.0N	0.5N
Approx. Photo Scale 1:	3,028,700				3,028,700						1,385,300	H	Ħ	1,423,500	1,385,300
Camera FL mm	80mm	E.	=	E	ı.	E	£	ı.	=	ı	ш	ш			ı.
Frame	5433	5434	5435	5436	5437	5438	5439	2440	5441	2775	5443	5444	5445	2446	5447

APOLLO 11 HASSELBLAD PHOTOGRAPHY

E G Magazine R Film SO 168 Time Reference - GET Color

Description	CSM over west Sea of Tranquility	Horizon at Sea of Tranquility with thruster in foreground	Horizon	IM shadow on surface	IM thruster shadow on sur- face	IM shadow on surface	Horizon and LM shadow on surface	=	Horizon and LM thruster	E.	Ξ	Low oblique of shallow crater	IM shadow on surface	#	=
Direction Tilt	М	W	W												
Approx. Tilt min max	5 10	70 75	70 75	Med obl.	Low obl.	ш	H	и	н	и	ш	Med obl.	и	и	u
Photo Quality	Good	Fair	11	Poor	Fair	11	Poor	н	Fair	Good	11	n	Poor	n	11
Sun Angle H, M, L	Low		Ħ	±	=	#	=	£	u	E.	ı.	u.	ш	11	E
1															
Point Long deg	18.5E														
Principal Lat deg	0.5N														
Approx. Photo Scale	1,385,200														
Camera FL mm	80mm	E	±	£	E	н	и	н	н	ш	ш	E	н	ш	ш
Frame #	2779	5449	5450	5451	5452	5453	2454	2455	5456	2457	5458	5459	2460	5461	2975

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine R Film SO 168 Time Reference - GET = CMT Color

									_					
IM shadow on surface	=======================================	Flag shadow and IM shadow on surface of Sea of Tranquility	= =	Flag, thruster and TV camera	E	Thrusters and IM shadow	Flag, thruster, and TV camera	Ξ	E	=	Flag shadow and LM shadow	-	=	E
Low obl.	E	=	=	=	E	High obl	Med obl.	=	F	E	E	=	=	±
Poor	=	=	Fair	Good	=	=	±	=	=	=	Fair	=	=	E
Low	E	=	=	=	=	=	E	=	=	=	=	=	=	=
	<u> </u>												_	
,														
,														
80mm	ш	=	E	E	=	ш	и	ı	ı.	H	£	=	#	ŧ
2463	2464	5465	5466	2975	8975	6975	2470	5471	5472	5473	2474	5475	5476	2477
	80mm Low Poor Low obl. LM shadow on	80mm	80mm Low Poor Low obl.	80mm Low Poor Low obl. IM shad " " " Flag sl " " " Flag sl " " " "	80mm Low Poor Low obl.	80mm	80mm Low Poor Low obl.	SOmm	SOmm	80mm Bom Low Poor Low obl. 1 " " " " " " " " " Eair " " " " " Eair " Eair " " " " " " Eair " Eair Eair " Eair " Eair Eair	80mm 80mm Low Poor Low obl. " " " " " " " " Rair " " " "	80mm	SOmm	SOmm

APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine Rilm SO 168 Time Reference - GET = GMT Color

Description	At Tranquility Base	Flag and IM shadows	E	Flag, LM thruster and TV	Ξ	ц	11	Flag, IM shadow	Flag and LM shadows	IM shadow	Ε	=	E	IM and Flag shadows	Flag and shadow	IM shadow
日日	271.															
Approx.	Tilt min max	Med obl.	=	ш	=	=	E	E .	н	н	и	н	E	4	н	E
Photo	Quality	Fair	н	Good	11	ŧ	ŧ			ш	н	11	п	п	н	E
Sun	Angle H, M, L	Low	u	H	#	E	=	=	#	ш	Ħ	ш	и	н	н	E
Fvd	7 88															
Point	t Long 0/1 A															
Principal	Lat deg												,			
	Photo Scale															
Camera	FL III	80mm	=	=	=	=	E	Ξ	F	=	=	=	E	=	=	=
Frame	*	5478	6275	2480	54.81	2875	5483	2484	5485	5486	5487	24,88	24,89	5490	5491	5495

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

= CPAT Magazine R Film SO 168 Time Reference - GET Color

Description	морг	LM shadow and flag	TV	морч	Lunar horizon	LM thruster, laser reflector	LM thruster, laser reflector seismometer	Lunar surface, horizon	adow	ш	surface	LM thrusters, laser reflector	IM strut shadow	Earth, part of LM	Е
**	IM shadow	LM sh	Flag,	LM shadow	Lunar	LM th	LM th seism	Lunar	LM shadow		Lunar	IM th	IM st	Earth	
Direction Tilt															
Approx. Tilt min max	Med obl.	ц	#	и	41	u	±	Ħ	u	H	и	и	row obl.	Hi. obl.	и
Photo Quality	Good	E	H.	Fair	п	Good	E	Ħ	Fair	н	u	Ħ	Good	Poor	п
Sun Angle H, M, L	Low	Ħ	ш	ш	и	ŧ	=	=	Е	11	11	ш	11	11	ш
F. 0															
Point Fwd Long 0/1 deg % H															
Principal Lat deg															
Approx. Photo Scale															
Camera FL mm	80mm	E	ш	ш	11	=	E	H.	и	и	и	11	11	ш	и
Frame #	5493	2494	5495	2496	2497	2498	6675	5500	5501	5502	5503	5504	5505	5506	5507

APOLLO 11 HASSELBLAD PHOTOGRAPHY

= CMI Film SO 168 Time Reference - GET Color Magazine R

Description At Tranquility Base	Earth, Part of LM	=	IM shadow	Flag	Flag, TV	IM thrusters, IM shadow	=	IM thrusters, IM shadow, TV	LM thrusters, flag, TV	=	TV from LM window	Flag from LM window	TV and flag from LM window	Strut shadow from LM window	Flag shadow from LM window
Direction Tilt															
Approx. Tilt min max	High obl	=	Med obl.	٤	E	E	=	E	=	ŧ.	±	=	=	±	Ħ
Photo Quality	Poor		E	Good	£.	E	Ħ	E	=		E	E	E	E	Fair
Sun Angle H, M, L	Low	E	E	E	п	F	=	E	E	=	E	Ε	E	E	=
5.7 %															
Point Fwd Sun Long o/l Angle deg % H,M,L															
Principal Lat deg															
Approx. Photo Scale															
Frame Camera # FL mm	80	11	£	=	Ε	E .	E	=	Ε	±	E	=	=	E	=
Frame #	5508	5509	5510	5511	5512	5513	5514	5515	5516	5517	5518	5519	5520	5521	5522

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine R Film SO 168 Time Reference - GET = GMT = GMT

	Τ	T	Т	Т	1	1	Т-	Т	\top	Τ-	1		\top		
Description At Tranquility Base	Flag and TV from LM window	Flag from LM window	Flag shadow from LM window		E	Inside spacecraft	=		÷	E	=		Tranquillity base, TV, flag,	=	E
Direction Tilt															
Approx. Tilt min max	Med obl.	=	=	ŧ	=								Med obl.	=	-
Photo Quality	Good	=	=	=	=	Poor	=	E	=	=	=	=	E	ŧ	E
	Low	F	E	E	=	=	=	=	-	E	=	=	=	=	=
% 7 %										f^-		1	1		
1 Point Long deg															
Principal Point Fwd Sun Lat Long o/1 Angle deg deg % H,M,L															
Approx. Photo Scale															
Frame Camera # FL mm	80	ш	ш	H	ı	E	E	E	E	E	F	=	E	=	=
Frаme #	5523	5524	5525	5526	5527	5528	5529	5530	5531	5532	5533	5534	5535	5536	5537

APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine R Film SO 168 Time Reference - GET = GMT Color

n Description	At Tranquility Base	TV, flag, thrusters	Thrusters and part of LM	IM shadow, flag shadow	=	IV, LM shadow, thrusters	IM shadow, thrusters	LM thrusters, TV, flag	=	Ε		IM thrusters, seismometer, laser reflector	E.	£	=	LM thrusters, TV, flag
Direction																
Approx.	min max	Med obl.	E	E	E	ŧ	=	=	Ε	=	=	Ε	E	E	E	E
Photo	Quality	Poor	E	=	E	Good	=	=	E	Ε	4	=	L .	=	E	E
Sun	Angle H, M, L	Low	=	=	=	=	=	=	F	н	u	±	u	н	t	=
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	~ 5															
Point	Long deg															
Principal	Lat deg															
	Photo Scale															
	F.	80	=	E	F	E	F	=	=	E	=	=	=	=	=	E
eg e	*	5538	5539	2540	5541	5542	5543	5544	5545	9755	5547	2548	5549	5550	5551	5552

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

= GMT Film SO 168 Time Reference - GET _ Color Magazine R

Description At Tranquility vBase	IM thrusters, TV, flag	Е	н							
Direction Tilt										
Approx. Tilt min max	Med obl.	и	и							
Photo Quality	Good	£	E							
Sun Angle H, M, L	Low	E	u							
Fvd o/1										
l Point Long deg				· · · · · · · · · · · · · · · · · · ·						
Principal Point Fwd Sun Lat Long o/1 Angle deg deg % H,M,L										
Approx. Photo Scale										
Frame Camera # FL mm	80	н	n							
Frame #	5553	5554	2225							

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MAGAZINE S

(FRAMES AS11-40-5844 THRU AS11-40-5970)

Magazine "S" is a color magazine taken with a 60mm lens aboard the IM. With the exception of the first three exposures the entire magazine was taken upon the lunar surface at Tranquility Base. There are a variety of subjects recorded including shots of the astronauts, the IM, the deployment of the experiment packages and pan shots of the lunar horizon. The first three frames include two high altitude views of the lunar surface and one earth shot. Overall photo quality is very good.

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

= GMT Time Reference - GET Film SO 168 Color Magazine S_

			T	T	T	T	1	7		Т	T	<u> </u>	7	T	T -
Description	Craters 216, 217	Barth	Messier, Messier A		=	1	Lunar surface with LM strut	Lunar surface	Shallow crater on surface	Small crater on surface	Lunar surface from near LM	п	11	=	Lunar surface with IM strut
Approx. Direction Tilt Tilt	MN		ß	ß	တ	2	88	Ø	တ	MS	M	MN	MN	N	NE
Approx. Tilt min max	02 59		02 09												
Photo Quality	Good	u	E	#	=	ı	=	E	E	£	E	=	=	E	=
Sun Angle H,M,L	High		Med	=	E	=	=	=	=	=	=	=	=	=	=
Fvd o/1											ļ				
Point Long deg	4°N 134°E		44.5E												
Principal Point Fwd Lat Long 0/1 deg deg %	4°N		28	·											
Approx. Photo Scale	1,984,400		2,022,900												
Camera FL mm	60mm	±	H	ш	ш	#	E	=	н	E	u	ıı	ı.	E	E
Frame #	5844	5845	5846	5847	5848	5849	5850	5851	5852	5853	5854	5855	5856	5857	5858

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine S Film SO 168 Time Reference - GET = CAMT Color

Description	Lunar surface with LM ladder	#	4	Armstrong exiting IM	±	IM skirt	Lunar surface with LM strut	Armstrong descending ladder	II	1	Armstrong on lunar surface	Lunar surface with LM strut	structure Lunar surface thru LM	experiment Erection of solar wind	=
Direction Tilt	മ	ಬ	S	NE	NE	NE	运	NE	NE	NE	NE	NE	NE	SE	SE
Approx. Tilt min max															
Photo Quality	Good	Ħ	н	н	Ħ	n	n		n	n	п	u	11	E	#
Sun Angle H, M, L	Med	E	u	Ħ	11	Ε	E	±	ı.	±	Ħ	=	u	Ħ	E
34 %	N/A														
acipal Point F t Long c															
Principa Lat deg															
Approx. Photo Scale															
Camera FL mm	09	11	н	н	и	II	ш	H I	ш	ŧ	12	E	Ε	Ε	ш
Frame #	5859	5860	5861	5862	5863	2864	5865	9985	2867	8985	6985	5870	5871	5872	5873

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

= GMT Film SO 168 Time Reference - GET Color Magazine S

Description	IM with flag and astronaut	ш	Undisturbed lunar soil	Astronaut footprint	ш	=	Astronaut boot	Small crater on surface	Lunar surface	Ε	Lunar surface with TV camera	Flag and solar wind experiment on surface	Ξ	LM skirt and strut	face Shallow craters on lunar sur-
Direction Tilt	S	S						S	М	MN	MN	NE	NE	Œ	SE
Approx. Tilt min max															
Photo Quality	Good	и	и	п	u	#	#	ш	#	и	н	Ħ	n	E	ш
Sun Angle H, M, L	Med	н	±	ı	u	ı.	u	ii	ŧ	и	c	=		E	н
Fvd o/1 %	N/A														
l Point Long deg															
Principal Point Fwd Sun Lat Long o/1 Angle deg deg % H,M,L				,											
Approx. Photo Scale															
Samera il mm	9	u	#	Ħ	н	н	ш	и	н	ш	ı.	E .	=	=	E
Frame (5874	5875	5876	5877	5878	5879	5880	5881	5882	5882#	6885	5884	5885	5886	2887

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine S Film SO 168 Time Reference - GET = GMT Color

Description	Shallow craters on lunar surface	Rim of small, shallow crater	=	=	Lunar surface beneath LM	Closeup shot of IM ascent	Closeup shot of IM skirt	IM strut	u	Closeup of LM ladder and plaque	Ε	п	n	IM strut	IM strut and astronaut
Direction Tilt	SE	လ	တ	MS	NE	NE	N	N	N	NE	NE	NE	NE	NE	NE
Approx. Tilt min mex															
Photo Quality	Good	=	=	#	F	±	E	H	E	Dark	H	п	Ħ	Good	Ħ
Fwd Sun o/1 Angle % H,M,L	Med	н	н	F	=	11	н	ı.	ı	E	ш	и	±	н	ш
F. 0 %	N/A														
Point Long				1											
Principal Lat deg (
Approx. Photo Scale															
Camera FL mm	09	#	Ε	II.	Ξ	=	±	=	=	=	=	=	=	=	=
Frame#	5888	5889	5890	5891	5892	5893	5894	5895	5896	5897	5898	5899	2900	5901	5902

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

= GMT Film SO 168 Time Reference - GET Color Magazine S

Description	Astronaut	Close-up shot of Portable Life Support System	Flag	Lunar surface	TV camera on lunar surface	Lunar surface	Shallow crater and rocks on horizon	Ш	==	Lunar surface	14	IM	11	Astronaut and solar wind experiment	IM footpad
Direction Tilt	EN		MS	M	MN	NW	N	N	Z	闰	SE	ß	တ	S	MS
Approx. Tilt min max															
Photo Quality	Good	Poor Focus	Good	, u	П	н	11	H	н	11	n	H	11	и	Ε
Fwd Sun o/1 Angle % H,M,L	Med	E	11	Ħ	u	ш	ı	ц	ı.	ı.	£	11	ıı	н	L L
Fwd o/1 %	N/A														
pal Point Fwd Long 0/1 deg %															
Principa Lat deg		:													
Approx. Photo Scale															
Frame Camera # FL mm	60	II	u	н	н	п	E	u	t.	F	E	=	=	=	=
Frame #	5903	7069	5905	9069	5907	5908	5909	5910	5911	5912	5913	5914	5915	5916	5917

APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine S Film SO 168 Time Reference - GET = GMT Color

Description	IM footpad		IM strut, solar wind experiment, TV camera	IM descent engine nozzle	Closeup of LM	Looking up at LM with earth behind	E	LM footpad	-	LM with astronaut	E	II.	Lunar surface	IM with astronaut	Lunar surface with rocks in foreground
Direction Tilt	MS	ಬ	MN	S	MS			MS.	MN	MN	NW	NW	М	NM	N
Approx. Tilt min mex															
Photo Quality	Good	H	E	=	Ε	=	ш	и	E	E	Ξ	E	ш	ш	Ε
Sun Angle H, M, L	Med	ш	±	н	E .	E	ц	ı.	=	=	=	Ε	E	E	=
P. C. 8	N/A														
l Point Fwd Long o/l deg %															
Principal Lat deg															
Approx. Photo Scale															
Camera FL mm	09	E	E	=	=	=	=	=	E	=	=	=	=	=	=
Frame #	5918	5919	5920	5921	5922	5923	5924	5925	5926	5927	5928	5929	5930	5931	5932

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

|| GMT Film SQ 168 Time Reference - GET Color Magazine S

Description	Lunar surface	н	и	н	El .	li li	Lunar surface with rocks in foreground	E.	=	Astronaut carrying experiment packages	E E	Ε	Astronaut placing experiments on surface	Astronaut assembling seismic experiment	=
Direction Tilt	N	NE	ਬ	I	SE	S	S	MS	М	S	S	ຮ	S	N	N
Approx. Tilt min max															
Photo Quality	Good	н	11	н	=	н	n	и	E	±	н	E	ш	u	Ħ
Sun Angle H,M,L	Med	H	u	±	u	E	п	E	E	±	E	E	=	11	E
	N/A														
al Point Fwd Long o/1 deg %															
Principa Lat deg											,				
Approx. Photo Scale															
Camera FL mm	09	ц	ш	ŧ	14	u	u	11	H	±	E	£	±	и	E
Frame #	5933	5934	5665	9665	5937	8665	6265	0765	1765	27/65	5943	5944	2765	9769	5947

APOLLO 11 HASSELBLAD PHOTOGRAPHY

= CMT Film SO 168 Time Reference - GET Color Magazine S

			1		<u> </u>		目		1		1	7			
Description	Astronaut assembling seismic experiment	=	Assembled seismometer on surface	Astronaut with seismometer	Laser target with LM in background	Closeup of seismic experiment	Small crater with rocky bottom	Ξ	F	Ξ	=	H	Lunar surface	Lunar surface with LM	N.
Approx. Direction Tilt Tilt in max	N	Z	N	N	N	N	SE	NE	NE	NE	N	N	NW	NW	NW
Approx. Tilt min max															
Photo Quality	Good	=	ш	F	=	=	п	=	E	±	E	ı	11	=	=
Sun Angle H,M,L	Med	=	Ε	£	п	н	E	11	u	=	E	ı.	E	E	=
	N/A														
Point Long deg											:				
Principal Lat deg				-											
Approx. Photo Scale															
Camera FL mm	9	Ε	=	E	L.	u	E	и	IJ	ŧ	11	ŧ	E	E	=
Frame#	87/65	6765	5950	5951	5952	5953	5954	5955	9565	5957	5958	5959	2960	5961	5965

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

= GMT Film SO 168 Time Reference - GET Color Magazine S

								· ·	 r	 	T	
Description	Astronaut and solar wind experiment	E	Closeup of LM skirt	II	Solar wind staff in surface	=	Ξ	=				
Direction Tilt	N	N	H	I	N	N	MN	MN				
Approx. Tilt min max												
Photo Quality	Good	ш	Dark	11	Good	ıı	#	Ħ				
Sun Angle H,M,L	Med	H	ш	E	11	н	H.	н				
Fwd o/1 %	N/A											
l Point Fwd Long o/l deg												
Principal Lat deg												
Approx. Photo Scale												
Frame Camera # FL mm	09	11	u	II	11	11	11	11				
Frame #	5963	5964	5965	9965	5967	5968	6965	5970				

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MAGAZINE T (Frames AS11-6349 thru Frames 6539)

Magazine T is 70mm black and white photography of the lunar surface taken from the Command Module at approximately 60 nautical miles orbital altitude. The first 14 frames are oblique with a directional view mostly to the north. The area of coverage begins near 108° east longitude at approximately 5° north latitude and continues to 100° east longitude. A 250mm lens was used. Targets of opportunity numbers 53 and 55 were at least partially imaged.

The next 120 frames are 250mm mostly northeast looking oblique sequences, commencing at the farside terminator (160°) west longitude) and continuing to an area just south of the Sea of Crises (60°) east longitude). The following targets of opportunity were partially imaged: TO #11, #16, #30, #34, #66, and #67.

The remaining 54 frames are west looking near vertical to obliques taken on the farside of the moon with an 80mm lens. Area of coverage begins at 170° east longitude at the equator and concludes at approximately 110° east, 2.5° north latitude. Targets of opportunity #33 and #46 are partially imaged.

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

= GMT Film 3400 Time Reference - GET Magazine T

Description	South of crater 201	Between craters 195 and 199 TO 55	Crater 189, Smythii Sea	Crater 195, TO 55	Crate 98, Part of crater 197	Just west of crater 201	Just north of crater 199	Craters 198,197,200, TO 53	View into crater 199	View partially obscure - South of crater 201	Looking northeast into craffs	Partial views of craters 194 and 196	View into crater 194	Just west of crater 199	Just west of crater 199
Direction Tilt	N	MN	M	M	N	N	N	N	N	NE	NE	N	N	NE	NE
.pprox. Tilt min max	50 55	55 60	70 75	65 70	9 09	50 55	50 55	9 09	45 50	50 55	65 70	65 75	65 75	75 50	45 50
Photo Quality	Good	ŧ	=	=	ıı	=	н		E	Poor	Good	н (7 4	ц
Sun Angle H, M, L	High	L	E	ı	E .	E .	E	Ε	E	=	=	u	E	ı	ı.
Fwd 0/1	0	0	0	0	0	20	10	0	0	0	0	0	30	0	80
Point Long deg	108E	100E	1	96.5E	103.5E	104距	103E	103E	103E	108.5E	106.5E			101E	101E
Principal Lat deg	5N	N9	Horizon	N9	8N	en	N9	9.5N	4.5N	SN	10.5N	Horizon	Horizon	4.5N	N [†] 7
Approx. Photo Scale	731,100	807,900		1,126,100	969,200	731,100	Ε	969,200	645,200	731,100	1,126,100			645,200	Ε
Frame Camera # FL mm	250	=	Ε	E	۵	Ε	E	E	=	E	Ε	=	=	=	=
Frame #	6769	6350	6351	6352	6353	6354	6355	6356	6357	6358	6359	9969	6361	6362	6363

TJ-200

APOLLO 11 HASSELBLAD PHOTOGRAPHY

= GMT Film 3400 Time Reference - GET Magazine T

	T	\neg	T	T	1										
Description	Crater XV area (not plotted)	Crater XV area	Ε	Crater XV area, TO 11	Crater XV area	Crater XV area, near TO 11	West of crater XV, near TO 11	=	=	=	E	=	E	Ξ	Vicinity of crater XV (not plotted)
Direction Tilt	Ŋ	戶	臼	NE	얼	臼	E	មា	H	臼	ы	떮	Œ	田	EΞ
Approx. Tilt nin max		99	99	8	99	60	60	55	55	55	55	55	55	55	
Approx Tilt min max		50	50	52	50	55	55	45	72	45	77	45	45	45	
Photo Quality	Poor	F	=	=	E	п	E	Fair	Ε	E	Good	E	=	=	Poor
Sun Angle H, M, L	Low	=	=	=	=	=	E	=	=	E	=	=	=	=	=
Fwd 0/1 A	0	0	0	0	0	0	0	5	8	9	9	50	57	52	0
Point Fwd Long 0/1 deg %		160W	160W		159W	160W	162.5W	164.5W	165W	165.5W	166.5W	166.5W	166.5W	167.5	a
Principal Lat deg		0.58	28	Horizon	28	13	0.58	0.58	1.58	28	28	1.53	0.58	0.58	Horizon
Approx. Photo Scale		767,100	=	854,300	Ε	807,900	=	699,200	H	=	=	E	=	=	
Camera FL um		250	=	=	=	=	=	E	=	=	=	=	=	=	=
Frame C	6364	6365	9989	6367	8969	6989	6370	6371	6372	6373	6374	6375	6376	6377	6378

TJ-2007

APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine T Film 3400 Time Reference - GET = GMT

Description	West of crater XV	Northwest of crater 310			=	Not plotted	South of crater 229	u	±	E	Southwest of crater 229	=	£	=	E
Direction Tilt	Ħ	闰	SE	Œ	垣		ы	臼	阳	臼	ы	H	ы	H	Ħ
Approx. Tilt min max	45 55	45 55	45 55	45 55	45 55	60 65	35 45	35 45	35 45	35 45	35 45	35 45	35 45	35 45	35 45
Photo Quality	Good	E	E	E	Е	Poor	Good	=	=	E	=	=	=	=	=
Fwd Sun o/l Angle % H,M,L	Low	E	=	E	F	Med	=	=	=	=	#	E	=	=	ŧ
Fwd o/1	0	0	10	07	0	0	0	0,7	0	07	40	20	10	5	70
incipal Point Fwd at Long 0/1 eg deg %	168.5W	169W	169.5W	170W	170W		175W	175.5W	176W	176W	177W	177.5W	177W	177.5W	177W
Principa Lat deg	0.58	28	1.5	0.58	1.5N		0.58	0	1N	1.5N	1.5N	2N	1N	0.5N	1N
Approx. Photo Scale 1:	699,200	Ħ	11	=	E		583,000	E	=	=	2	=	11	E	Ξ
Frame Camera # FL mm	250	E	=	Ε	=	=	Ε	=	=	=	£	=	=	=	=
Frame #	6379	6380	6381	6382	6383	6384	6385	9869	6387	6388	6389	6390	6391	6392	6393

APOLLO 11 HASSELBLAD PHOTOGRAPHY

= CPMT Film 3400 Time Reference - GET Magazine T

Description	Crater 229 area	West of crater 229	Northwest of crater 229	Crater 229	East of crater 225	E	East of crater 225	East edge of crater 225	South edge of crater 225	Just northeast of crater 225	E	Just west of crater 225	E	Between craters 225 and 220	Crater 227
Direction Tilt	NE	NE	NE	NE	妇	ы	표	E	囝	NE	NE	Œ	豆	NE	NE
Approx. Tilt min max	07 09	02 09	02 09	60 70	35 45	35 45	35 45	35 45	35 45	35 45	35 45	07 06	077 06	35 45	0/ 09
Photo Quality	Fair	Good	F	Fatr	Good	E	E	E	Ε	E	и	L	E	E	E
Sun Angle H, M, L	Med	E	E	High	Med	=	=	E	E	E	=	E	Ε	High	=
F.vd 0/1 %	0	0	5	0	0	0	0	0	0	0	70	0	9	0	0
cipal Point	13	177W	179.5W	174.5W	174.5E	175.5E	174.5E	173E	172E	173.5E	173E	169.5E	169Е	168.5E	175.5E
Principal Lat deg		4.5N	5N	N [†] 7	0	0.58	0.55	0	0.58	ZN	1.5N	0	0.5N	3N	N/
Approx. Photo Scale	969,200	=	=	1,041,100	550,900	=	E	=	F	=	=	513,300	=	550,900	1,041,100
Frame Camera # FL mm	250	=	E	=	Ε	=	=	=	=	=	.=	=	=	E	=
Frame #	7689	6395	6396	6397	6398	6369	0079	1079	7079	6403	7079	9079	9079	2079	9079

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine T Film 3400 Time Reference - GET = GMT

	 										_				
Description	Partial view of crater 227	Not plotted	Southeast of crater 220	East of crater 220	Near crater 220	Crater just northwest of	1	Near crater 220	#		=	Southwest of crater 220	±	=	Area between craters 218,220
Direction Tilt	NE		NE	NE	NE	NE.	NE	NE	NE	NE	NE	NE	NE	NE	NE
Approx. Tilt min max	57 5	75	45	09	70	07	07	70	45	70	70	45	45	45	50
m im	99	8	3	55	9	8	8	9	3	8	8	3	9	3	0,4
Photo Quality	Fair	Poor	Good	=	=	E	E	=	E	E	=	=	E	=	E
Sun Angle H,M,L	High	ш	Med	E	=	=	=	=	=	E	=	High	=	E	Ε
	70		0	0	0	0	50	0	0	0	0	-	2	20	0
Coint Cong			165.5E	166.5E	168.5E	161.5E	161 E	168.5E	161.5E	164.5E	160.5E	155.5E	156E	155E	154.5E
Principal I Lat deg	Horizon	Horizon	2.5N	5.5N	7N	1.5N	1.5N	6N	3N	NZ.	5N	3N	3N	ЗМ	- N2
Approx. Photo Scale 1:			601,600	807,900	1,041,100	550,900	=	1,041,100	583,000	1,041,100	#	601,600	u	и	622,200
Samera FL mm	250	=	E.	E	=	E	E	=	=	=	=	=	=	=	=
Frame (#	6079	6410	6411	6412	6413	6414	6415	9179	6417	6418	6419	0279	6421	2779	6423

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine T Film 3400 Time Reference - GET == GMT

Description	Area between craters 218, 220 (not plotted)	Northeast of crater 218	East of cratér 218	Crater IX area, TO 30	E	Crater IX area, close to TO 30	r	=	E	E	East of crater 217	Just southeast of crater 217	Crater IX, between TO 30, 34	±	E	
Direction Tilt	NE A	N	NE E	N	N	NEC	NE	NE	NE	NE	N	N	NE (NE	NE	
Approx. I Tilt min max		55 65	09, 05	72 20	05 07	45 55	45 55	45 55	45 55	45 55	20 30	15 25	60 65	60 65	60 65	
Photo Quality	Poor	Poor	Good	£	E	÷	H	Ε	E	5.	E	E	E	E	E	
Fwd Sun o/1 Angle % H,M,L	O High	E	=	=	E	=	=	=	=	E	=	=	E	=	=	
50 %	ō	0	0	0	0	0	8	07	0	0	0	0	0	35	35	
Point Long deg		152E	1 50E	144E	143.5E	142E	143E	141.5E	143.5E	142E	138E	136E	140.5E	140E	140E	
Principal Lat		8.5N		5.5N	ΝŤ	4.5N	4.5N	4.5N	N7	4.5N	1.5N	1.5N	N6	8.5N	7.5N	
Approx. Photo Scale		969,200	767,100	645,200	002,269	E	Ε	=	E	E	765.500	771,300	969,200	=	=	
Camera FL mm	250	E	=	=	E	E	=	٥	=	=	E	F	E	=	=	
Frame	6424	6779	9779	6427	6428	6779	0£79	1279	25.79	66.33	7879	56.73	98.79	64.37	6438	

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine T Film 3400 Time Reference - GET = GMT

Description	Crater IX, between TO 30, 34	±	Е	=	Crater IX, close to TO 30	Just northwest of crater 216	South of crater 216	Crater 215 area	Just northwest of crater 216	Crater 211	£	Crater 205	Crater Jansky	Northern edge of Smyth Sea	Crater Neper, Crater Neper G
Direction Tilt	NE	п	E	E	E	N	NE	N	N	N	N	N	N	N	NE
Approx. Tilt min max	99	60	9	55	65	55	25	65	09 (9	09 (02 (9 9	0 45	5 65
H. in	55	55	55	દુ	9	50	15	9	δŽ	50	50	99	55	07	55
Photo Quality	Good	E	=	=	E	ŧ	Ħ	н	11	Fair	ŧ	ŧ	#	E .	E
Sun Angle H, M, L	High	E	ш	£	н	E	E	u	11	Ė	н	Ε	High	H	E
Fwd o/1 % H	64	07	07	077	0	0	0	0	0	0	0	0	0	0	0
Point Long	139.5E	139.5E	139.5E	139Е	143E	131.5E	133.5E	133.5E	130.5E	120E	120.5E	112.5	89.5E	35.€8	85E
Principal Lat	7N	6.5N	5.5N	5N	5.5N	5N	1N	10N	N9	N9	N9	N5.6	8.5N	N [†] 7	N6
Approx. Photo Scale	807,900	E	Ε	731,100	969,200	731,100	007*597	969,200	767,100	=	=	1,041,100	807,900	601,600	854,300
Camera FL mm	250	F	F	=	=	E	E	=	Ħ	E	=	=	=	=	E
Frame #	6679	0779	6441	2779	6443	7779	9779	97779	2779	87779	6779	6450	6451	6452	6453

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

= GMT Time Reference - GET Film 3400 Magazine T

Description	Crater Neper, Neper G	=	Craters Neper, Neper G, Neper Q	Craters Neper, Neper G	Ε	Craters Neper, Neper G, Neper Q	Ξ	Crater Neper		Crater Neper, Neper G,partial TO 16	Crater Banachiewicz	u	Crater Banachiewicz E	Crater Banachiewicz	Just east of Banachiewicz E
Direction Tilt	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	N	N	NE	NE	N
Approx. Tilt min max	65	65	65	65	65	65	65	65	65	65	65	09	65	09	09
Apj T min	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55
Photo Quality	Good	=	=	Ε	11	E	ш	=	E	11	Fair	Good	£	и	E
Sun Angle H, M, L	High	=	=	=	=	=	ш	=	±	п	E	High	Ε	11	£
Fvd 0/1	55	09	9	97	70	99	20	10	07	20	0	8	0	0	0
Point Long deg	84.5E	85E	83.5E	85E	84E	83.5E	85E	86.5E	王98	84.5E	79.5E	79.5E	76E	79.5E	77E
Principal Lat deg	N6	8N	8.5N	8.5N	10.5N	8N	8N	8.5N	9.5N	9.5N	N9	N9	N.L	N9	N.L
Approx. Photo Scale	854,300	=	11 11	×	Ε	ш	E	ıı	E	=	E	E	009,706	854,300	Ε
Camera FL mm	250	11	=	ш	E	u	H	H	ŧ	=	ŧ	=	E	=	Ξ
Frame #	6454	6455	9579	6457	6458	6579	0979	1979	7979	6463	7979	979	9979	2979	8979

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine T Film 3400 Time Reference - GET = GMT

Description	Craters Neper, Neper Q, partial TO 16	Craters Neper, Neper Q, Neper G, partial TO 16	Smyth's Sea	Crater Condorcet, TO 66	Crater Condorcet F	=	Crater Banachiewicz	Near crater Hasen B	Crater Condorcet, TO 66	Craters Shubert, Shubert B	Crater Shubert G	н	Crater Condorcet F	Craters Shubert and Shubert B	Crater Apollonius G, TO 67
Direction Tilt	H	NE	E	MN	N	N	ម	NE	N	H	EN	NE	N	ਬ	NE
Approx. Tilt min max	0/ 09	60 70	55 65	70 75	55 60	95 60	55 60	70 75	65 75	65 75	90 95	50 60	65 70	65 75	45 55
Photo Quality	Good	н	11	u	и	u	#	¥	ш	11	н	14	ŧ.	14	E
Sun Angle H,M,L	High	ı	E	E .	=	E	=	=	E	=	=	=	=	E	E
F. o	0	50	0	0	0	50	0	0	0	0	0	4	0	0	0
Point Long leg	85.5E	85.5E	86E		73E	73.5E	79Е	-61	d	80E	76.5E	75E	73.5E	80.5E	63Е
Principal Lat deg	N6	10N	2.5N	Horizon	8.5N	N/	N9	Horizon	Horizon	2.5N	N 7	4.5N	8.5N	2.5N	3.5N
Approx. Photo Scale 1:	1,041,100	ш	854,300		807,900	=	=			1,227,800	767,100	E	1,126,100	1,227,800	699,200
Camera FL mm	250	E	=	4	E	E	E	E	=	E	E	E	=	=	E
Frame #	6979	6470	6471	6472	6473	7/7/9	6475	9279	6477	8/49	6279	0879	1879	2879	64,83

APOLLO 11 HASSELBLAD PHOTOGRAPHY

= GMT Film 3400 Time Reference - GET Magazine T

		Т	T												
Description	Sea of Crises, Crater Picard on horizon, TO 70 partial	Crater 225	West of crater 225	±	E .	Between craters 225 and 303	=	E	Ε	West of crater 303	=	=	E	E	E
Direction Tilt	MN	м	М	73	ж	33	¥	3	3	[3	3	3	A	×	E
Approx. Tilt min max	75	25	25	25	25	25	25	25	25	25	25	25	25	30	8
Ap T	65	15	15	15	15	15	15	15	15	15	20	ଷ	ଷ	25	25
Photo Quality	Good	E	н	u	E	ŧ.	u	E	H	E	E	E	Ħ	и	E
Sun Angle H, M, L	High	Med	=	=	E	=	F	£	ш	E	=	E	E	E -	E
P T Se	0	0	8	8	2	22	2	2	70	70	70	20	70	70	5
Point Long deg		1 70E	169E	168E	167E	165.5E	164E	163E	162E	161E	159.5E	158.5E	157.5E	156E	155E
Principal Point Fwd Lat Long 0/1 deg deg %	Horizon	0	0	0	0	0	0	0.5N	0.5N	0.5N	N5.0	0.5N	0.5N	1N	1 N
Approx. Photo Scale		1,472,800	Ξ	=	Ε	E	E	F	E	=	1,493,800	H	Ħ	1,543,200	11
Frame Camera # FL mm	250	&	E	=	E	=	E	E	E	=	=	E	=	F	E
Frame	7879	64.85	9879	2879	8879	6879	9679	1679	6492	6493	7679	6495	9679	1679	9679

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine T Film 3400 Time Reference - GET

Description	North of crater 297	£	E	E	South of crater 218	E	±	£	Crater IX area	=	=	E	Craters IX, 217, 216	Craters 217,216, near TO 33	Ľ
Approx. Direction Tilt Tilt in max	ß	М	13	А	М	M	M	W	м	М	М	М	М	A	м
Approx. Tilt min max	25 30	25 30	35 45	35 45	35 45	35 45	35 45	45 55	45 55	45 55	50 55	50 55	50 55	50 55	50 55
Photo Quality	Good	E	H.	=	н	ш	н				E	£.	ı.	44	=
Sun Angle H, M, L	Med		High	£	=	ı	E	£	E	±		F	=	u	F
	20	70	70	20	2	70	70	70	2	70	70	70	70	70	2
l Point Long deg	154E	153E	152E	151E	149.5E	148.5E	147E	146E	144.5E	143.5回	142E	141E	139.5E	138.5E	137E
Principal Point Fwd Lat Long 0/1 deg deg %	1 N	0.5N	0.5N	1 N	1N	1 N	1 N	1N	1N	1N	1 N	1.5N	1.5N	1.5N	1.5N
Approx. Photo Scale	1,543,200	ш	1,821,900	11		ш	и	2,184,900	±	E	2,284,700	ı	E	£	ш
Frame Camera # FL mm	80	E	н	u	ш	±	и	ц	и	E	ш	E	ш	u	E
Frame #	6679	9059	6501	6502	6503	7059	6505	9059	6507	6508	629	6510	6511	6512	6513

APOLLO 11 HASSELBLAD PHOTOGRAPHY

= GMT Film 3400 Time Reference - GET Magazine T

Description	Craters 217, 216, near TO 33	E	E	=	South of crater 216	=	West of crater 216	=	=	Crater 282	Craters 282, 211	=	West of crater 282	Partial view of crater 211	Ε
Direction Tilt	м	×	ĸ	А	M	М	X	М	М	М	М	M	М	М	M
Approx. Tilt min max	55	55	99	60	99	99	65	65	65	65	70	70	70	75	75
Ap T min	દુ	50	55	55	55	55	09	9	09	.8.	65	65	65	65	65
Photo Quality	Good	=	E	=	н	=	Ħ	Ħ	Ħ	=	#	ш	Е	н	Ħ
Fwd Sun o/1 Angle % H,M,L	High	=	E	#	ш	u	#	и	ш	E	#	11	ш	u	=
Fwd 0/1	20	70	70	70	70	70	70	09	09	99	09	09	09	50	52
Point Long deg	136E	135E	133.5	132E	130.5E	129E	127.5E	126E	125E	123E	121E	119E	117E	1	ı
Principal Lat deg	1.5N	2N	1.5N	2N	2N	2N	2N	ZN	2.5N	2.5N	2.5N	2.5N	ЭN	Horizon	Horizon
Approx. Photo Scale	2,284,700	ш	2,524,600	#	и	44	3,028,700	E	#1	E	3,519,000	u	E		
Frame Camera # FL mm	80	н	н	¥	E	ш	н	ш	u	4	H	E	F	E	E
Frame #	6514	6515	6516	6517	6518	6519	6520	6521	6522	6523	6524	6525	6526	6527	6528

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

= GMT Time Reference - GET Film 3400 Magazine T

Description	South of crater 211	Looking west towards craters 206, 207	=	=	Craters 206 and 207	£	II.	Crater 204	и	Crater 202	West of crater 202		
Direction Tilt	М	n	11	н	11	=	ш	ı	и	11	H		
Approx. Tilt min max	65 75	70 75	70 75	70 75	75 80	75 80	75 80	75 80	75 80	75 80	75 80		
Photo Quality	Good	Fair	н	ш	ı	ŧ	u	ŧ	E	**************************************	:		
Sun Angle H, M, L	High	=	E	E	E	= '	E	£	E	ŧ	=		
Fvd 0/1	52	Q	07	07	07	R	R	30	8	07	8		
Foint Long													
Principal Point Fwd Lat Long o/1 deg deg %	Horizon	Horizon	Horizon	Horizon	Horizon	Horizon	Morizon	Horizon	Horizon	Horizon	Horizon		
Approx. Photo Scale													
Frame Camera # FL mm	8	Ε	E	E	E	E	E	=	Ε	±	F		
Frame #	6259	6530	6531	6532	6533	6534	6535	6536	6537	6538	6239		

		•
		•

MAGAZINE U (Frames AS11-42-6160 thru Frames 6348)

Magazine U was taken from the CSM while on a near circular lunar equatorial orbit. Both the 80 and 250mm lens were used. Magazine U comtains oblique and near vertical black and white views of both the lunar nearside and farside. There are several photographs of the solar corona.

The following targets of opportunity are at least partially imaged: TO #'s 11, 16a, 33, 43, 46, 66 and 67.

:			•
			-
		•	
•			*
-			•

Sheet 1 of 11 Sheets

APOLLO 11 HASSELBLAD PHOTOGRAPHY

= CMI Time Reference - GET Film 3400 B&W Magazine U

									:						
Description	No image	Solar corona	Ε	E	No image	Solar corona	Minute fraction of solar corona	н	Solar corona	No image	Solar corona	No image	Fraction of solar corona	E	No image
Direction Tilt															
Approx. Tilt min max															
Photo Quality															
Sun Angle H,M,L															
Fvd o/1															
Point Long deg															
Principal Point Fwd Sun Lat Long o/1 Angle deg deg % H,M,L															
Approx. Photo Scale															
Camera FL mm															
Frame #	6160 - 6166	6167	6168	6169	6170 - 6175	6176	6177	6178	6179	6180- 6194	6195	61%- 6200	6201	6202	6203

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine U Film 3400 Time Reference - GET = CMT

B&W

Description	Area east of Foaming Sea	E	Crises Area southeast of Sea of	=	£	TO 66, partial coverage southeast of Sea of Crises	±	E	E	E	TO 67, partial coverage south of Mare Crisium	TO 66, partial coverage southeast of Mare Crisium	Area north of Langrenus and Mare Spumans	Area northeast of Langrenus	Area north of Langrenus
Direction Tilt	¥	Α	MN	NW	NW	NW		NW	NW	MN	N	N	Þ	MS.	35
Approx. Tilt min mex	60 65	50 55	60 65	60 65	55 60	65 70	55 60	65 70	<i>5</i> 9 09	<i>59</i> 09	59 09	09 55	50 55	55 70	55 60
Photo Quality	Fair	Poor	Fair	E.	ı.	Poor	£	ш	Fair	E	Poor	Fair	u	E	E
Sun Angle H,M,L	Med	ŧ	Ε	E	High	Med	E	E	E	£	E	¥	Ξ	н	н
Point Long deg	67E	69.5E	96E	69.5E	74.5E	63.5E	69.5E	62.5E	70E	65E	63Е	70E	61.5E	62E	57.5E
Principal Lat deg	NL	0.5N	10N	12N	6.5N	10N	2.5N	10.5N	12.5N	12N	N6	10.5N	2.58	86	89
Approx. Photo Scale	3,028,700	2,397,200	3,253,500	2,836,200	2,524,600	3,253,500	2,524,600	3,253,500	3,028,700	3,028,700	3,028,700	2,524,600	2,184,900	2,669,700	2,524,600
Frame Camera # FL mm	88	E	±	E	=	E	E	F	=	=	E	=	E	=	=
Frame #	6204	6205	6206	6207	6208	6209	6210	6211	6212	6213	6214	6215	6216	6217	6218

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

= GMT Time Reference - GET Film 34,00 B&W Magazine U

Description	Messier G, Goclenius A	TO 67, partial coverage south of Mare Crisium	TO 70a, partial coverage Mare Cristum on horizon	Ξ	TO 67, partial coverage, area south of Sea of Crises.	Messier A, Messier B, Messier	TO 67 partial coverage, area south of Mare Cristum	E	Messier A, Messier B, Messier	=	Goclenius	TO 67 partial coverage, area south of Mare Crisium	Ε	=======================================	Messier A, Messier B, Messier
Direction Tilt	MS	MN		N	NW	Μ	3	MN	MS	M	MS	MN	¥	MM	S
Approx. Tilt min max	95 60	55 05	0/ 09	92 60	55 60	57	55 60	50 55	65	9 09	55 60	25 60	60 65	9 09	45
Photo Quality	Poor	Fair	Poor	Fair	11	E	Ε	E	Good	E	Ε	£	u	Ε	E
Sun Angle H,M,L	Med	ı	ш	i	E	E	E	E	=	E	Ε	Low	=	=	=
										45					
Point Long deg	58.5E	55.5E	57.5E	62.5E	56E	52E	48.5E	47.5E	78E	42E	3 27	367	42.5E	42E	3 27
Principal Lat deg	13	7.5N	15N	11.5N	10N	2N	5N	5.5N	1.58	2.58	6.58	11N	12N	10.5N	1.5
Approx. Photo Scale	2,524,600	2,397,200	3,253,500	2,524,600	2,397,200	1,944,520	2,397,200	2,397,200	3,253,500	2,836,200	2,669,700	2,397,200	2,669,700	3,253,500	1,944,500
Frame Camera # FL mm	80	E	E	=	E	=	E	=	ı.	=	=	=	=	E	=
Frame #	6219	6220	6221	6222	6223	6224	6225	6226	6227	6228	6229	6230	6231	6232	6233

APOLLO 11 HASSELBLAD PHOTOGRAPHY

= GMT Time Reference - GET Film Magazine U

Description	Censorinus N, Censorinus W	Theophilus, Madler, Daguerre	=	Ε	Maskelyne	E	Torricelli	Theophilus	Farside terminator, not plotted	=	TO 11, partial coverage, northwest corner of crater 235	TO 11	TO 11	Crater 312	E
Direction Tilt	ഥ	တ	တ	တ	×	W	SW	MS			Œ	ы	闰	တ	w
Approx. Tilt min max	50 55	70 75	70 75	60 65	45 50	45 50	45 50	60 70			25 30	10 20	10 20	0/ 09	55 65
Photo Quality	Good	Ħ	Ε	ш	Poor	H	n	E			Good	n	n	11	Ε.
Sun Angle H, M, L	Low	±	и	ŧ	ш	и	и	и			Low	H	и	ш	=
t Fvd															
Poin Long deg	37E			28.5E	28E	29E	27.5E	28E			155W	159.5W	160.5W	M791	163W
Principal Lat deg	0.53			138	2N	2.5N	38	11.58			1.5N	N5.0	0.58	10.58	118
Approx. Photo Scale	2,397,200			3,028,700	1,944,520	11	=	2,836,200			1,604,100	1,454,200	=	3,253,500	E
Camera FL mm	80	E	F	=	E	E	=	=			88	=	F	=	=
Frame #	6234	6235	6236	6237	6238	6239	6240	6241	6242	6243	6244	6245	6246	6247	6248

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine U Film 3400 Time Reference - GET = GMT

															_
Description	Crater 310,	TO 15, partial coverage	East of crater 225	West of crater 225	East of crater 303	West of crater 303	Crater 220	Crater 301		Crater 297	South edge of IX	Crater 292 near top TO 33	н	Crater 292 on left edge, TO 33	11
Direction Tilt	SW	М	М	W	N	MS	NW	S		ಬ	भ	SE	SE	SE	SE
Approx. Tilt min max	70 75	25 30	5 10	5 10	20 25	5 10	45 50	57 07		99 05	5 10	30	30	25 60	55 60
Photo Quality	Good	Fair	н	u	11	Poor	ш	ш		Poor	ш	н	#	и	44
Sun Angle H, M, L	Med	±	ı.	E	L	High	±	11		Med	ш	ıı.	и	н	#
Fvd 0/1 %												-			
Point Long leg		175.5E	177E	169.5E	165.5E	161E	160E	159.5E		151.5E	143.5E	139.5E	139.5E	137.5E	137.5E
Principal Lat deg		1.8	0.5N	0	2N	1.5N	N [†] 7	55		4.58	1.5N	2,58	2.58	577	7 2
Approx. Photo Scale		1,604,100	1,400,700	и	1,472,800	1,400,700	1,944,500	1,821,900		2,200,000	1,390,000	1,600,000	п	2,500,000	14
Camera FL mm	80		н	ı	u	±	=	#	ш	и	ш	ш	ш	н	
Frame #	6779	6250	6251	6252	6253	6254	6255	6256	6257	6258	6229	6260	6261	6262	6263

APOLLO 11 HASSELBLAD PHOTOGRAPHY

agazine U Film 3400 Time Reference - GET = GMT = CAMT

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	Description	Crater 283 in foreground, TO 43	Н	Probably near 123E, 1N; very poor photo, not plotted	#	Near crater 283, TO 43		Position probably S or SW of Crater 211, very poor photo	Crater 211, TO 46	Crater 234,	E.	Near crater 234, window in lower left corner	Crater 234, chain craters in	Crater 232 is the 2nd major one in foreground, limb	Near 299	Crater 299 in middle foregroun	
	Direction Tilt	SW	MS			S	တ		MN	MN	MN	NE	NE	NE	Œ	M	
ā	ox. t	99	99			99	99		50	65	65	2	70	70	70	70	
901	Approx. Tilt min max	55	55			55	55		77	3	8	65	65	65	65	65	
Time kerence - uzi	Photo Quality	Good	=	Poor	=	Fair	E	Poor	и	Ε	E	Good	=	=	Poor	E	
⊈ l	Sun Angle H, M, L	High	=	E	ш	=	E	=	E	Low	E	=	E	E	High	E	
0 3	P. do													<u> </u>			
Film 3400 B&W	Point Long deg	1	124E			122.5E	122.5E		121E	155W	155W	157W	155.5N	163W	158E	155E	
D	Principal Lat deg	4.58	4.58			55	58		N9	11N	11N	12N	8N	10N	28	2.58	
Magazine	Approx. Photo Scale	2,500,000	=			2,500,000	=		620,000	3,200,000	3,200,000	3,900,000	=	=	3,600,000	=	
	Camera FL mm	8	E	=	=	=	=	=	250	8	E	E	E	=	=	=	
	Frame #	6264	6265	9929	6267	9979	6929	6270	6271	6272	6273	6274	6275	6276	6277	6278	

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

= GMT Time Reference - GET Film 3400 B&W Magazine U

Description	Crater 297, limb	Crater 295 at pp	Near crater 202	About 30 km south of crater 201	Between crater 206 and crater 202	On SE rim of crater 199	Bright rayed crater on west lip of crater 199	North edge of crater 269	1	West edge of crater 226	E	West edge of crater 226, spall rayed crater	Eastern part Mare Smythii	=	West edge of crater 226, small bright rayed crater.
Direction Tilt	SE	S	NE	NE	NW	N	SE	S	æì	SE	SS	SS	SE		SE
Approx. Tilt min max	02 09	65 70	57 07	57 07	10 20	5 10	5 10	5 10	5 10	20	20	20	0 5	5 10	25 30
Photo Quality	Poor	n	Good	F	Fair	Good	Fair	Good	ı.	ш	=	E	Fair	=	Good
Sun Angle H,M,L	Med	и	High	=	=	=	E	ш	E	н	=	=	£	Ε	=
Fwd o/1															
Point Long deg	151E	145.5E	108E	108E	111.5E	101.5E	101E	98E	98E	90.5E	90.5E	90.5E	91臣	92.5E	91.5E
Principal Lat deg	7.58	5.58	0	4.5N	2.5N	3.5N	4.5N	1.5N	1N	5.58	5.58	5.58	0.58	1N	5.58
Approx. Photo Scale	3,200,000	3,800,000	622,000	670,000	475,000	000,077	446,000	000,077	ı	000,07	=	ш	000,077	000,977	510,000
Frame Camera # FL mm	80	щ	250	=	E	E	Ε	H	ı	H	u	=	E	±	F
Frame #	6226	6280	6281	6282	6283	6284	6285	9829	6287	6288	6286	6290	6291	6292	6293

APOLLO 11 HASSELBLAD PHOTOGRAPHY

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		sma ll	T			50											
= LM1	Description	West edge of crater 226, sm bright rayed crater	North edge of Mare Smythii small bright rayed crater	1	West of crater 226, small bright rayed crater	About 100km south of Grater 20	About 200km southeast of crater 201	Messier D	Secchi K	Taruntius G	Messier	Messier	Messier	Secchi	Area east of Secchi U.	Area west of Secchi U	
	Direction Tilt	SE	N	N	SE	N	N	Near Wert	Near Vert	Near Vert	ß	М	М	N	N	Near Vert	
· GET	Approx. Tilt min max	8	10	10	70	5	10	5	5	5	20	20	8	8	.25	5	
nce nce	App Ti min		5	2	65	0	5	0	0	0	10	유	2	5	10	0	
Time Reference -	Photo Quality	Good	Fair	=	Good	E	F	Poor	F	=	£	E	=	Ξ	£	E	
ļ	Sun Angle H, M, L	High	£	F	=	E	E	Med	=	=	=	=	=	=	=	E	
3700 B&W	Fwd 0/1 %																
Film	Point Long deg	91.5E	89E	368	91E	107.5E	110.5E	46.5E	45.5E	49.5E	48E	47.5E	47.5E	43.5E	77/E	41.5E	
D D	Principal Lat deg	5.58	6.5N	N5.9	6.85	3.5N	2N	3.58	0	ZN	1.58	1.58	1.58	2.5N	0.5N	N1	
Magazine	Approx. Photo Scale	510,000	442,000	=	1,200,000	777,000	443,000	740,000			765,400	Ε	E	E	Ε	000,044	
	Camera FL mm	250	=	=	=	=	=	=	E	=	=	=	E	=	=	=	
	Frame #	6294	6295	9629	6297	6298	6599	9300	6301	6302	6303	9069	6305	9069	6307	9069	

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Sheet 9 of 11 Sheets

APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine U Film 3400 Time Reference - GET = GMT = GMT

Frame #	Frame Camera # FL mm	Approx. Photo Scale 1:	Principal Lat deg	Point Long deg	Fvd 0/1 %	Sun Angle H, M, L	Photo Quality	Approx. Tilt min max	x. Direction Tilt	Description
6306	250	770,600	0.5N	42E		Med	Poor	0	5 Near Vert	Area south of Secchi U
6310	Ε	и	0.5N	42E		=	н	0	5 Near Vert	Ε
6311	и	1,041,100	113	46E		Low	-	65 70	O SE	Craters Gutenberg E, Goclenius
6312	=	=	11.8	76E		ŧ		65 70	O SE	E
6313	F	807,900	4.58	38E		=	z.	55 60	O SE	Craters Censorinus C, Guten- berg G
6314	E	000,007	0.5N	33.5E		#	Fair	0	5 Wear Vert	Area north of Maskelyne A
6315	u	16	1 N	33.5E		=	u	0	5 Near Vert	E
6316	±	ш	0	32.5E		ı.	Ħ	0	5 Near Vert	Maskelyne A
6317	E	773,300	ZN	28.5E		=	Poor	5 10	MN	Maskelyne B
6318	=	000*007	0.5N	30E		E	#	0	5 Near Vert	Boot Hill, Maskelyne
6319	E	н	0	29.5E		E	£	0	5 Near Vert	Duke Island
6320	=	443,300	ZN	30E		=	=	5 10	N	Masklyne
6321	=	ŧ	2N	30.5E		E	E	5 10	MN O	E
6322	ı.	¥	ZN	29.5E		Ε	ı.	5 10	MN O	=
6323	Е	000,007	0	28.5E		=	u	0	5 Near Vert	Sidewinder Ridge

APOLLO 11 HASSELBLAD PHOTOGRAPHY

E.S. Magazine U

Description	Maskelyne B	Dark - not plotted	Maskelyne G	Blank	Blank	Unnamed crater		Unnamed crater north of crater 292	Unnamed crater south of crater 216	Е	=	Partial TO 43(near crater 281)	#	Partial crater 227 (Partial TO 160)	l l
Direction Tilt	MN		Near Vert			X	SE	MS	W	W	N	MS:	SW	NE	NE
Approx. Tilt min mex	10 20		0 5			5 10	02 09	50 55	55 60	55 60	57 07	25 30	25 30	9 09	70 75
Photo Quality	Poor		Poor			Foor	Fair	Good	Fair	u	Poor	П	н	Fair	Ε.
Sun Angle H, M, L	Low		Ħ			High	E	=	Med	ш	=	=	£	E	=
Fwd o/1															
. Point Long deg	27E		26.5E			143.5E	137.5E	140.5E	133E	133E	132.5E	122.5E	122.5E	172.5E	norizon
Principal Point Fwd Lat Long 0/1 deg deg \$	1.5N		2.5N			0.5N	S [†] 7	18	0.5N	0.5N	1 N	5.58	5.58	N7	above
Approx. Photo Scale	765,400		000,007			443,300	1,041,100	731,100	731,100	E		1,572,100	Ξ	1,041,100	
Frame Camera # FL mm	250					250	=	£	=	=	Ξ	80	E	250	=
Frame #	6324	6325	6326	6327	6328	6359	6330	6331	6332	6333	6334	6335	6336	6337	6338

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Film 3400 Time Reference - GET B&W Magazine U

							$\overline{}$	$\neg \neg$					$\neg \neg$	
Description	Partial crater 226	Unnamed craters north of 303	=	E	=	E	E	E	E	=		:		
Direction Tilt	NE	Near Vert	Near Vert	N	N	N	N	N	N	Near Vert				
Approx. Tilt min max	70 75	9 0	9 0	25 30	25 30	25 30	25 30	25 30	25 30	9 0				
Photo Quality	Fair	E	ı	II.	ŧ	ı.	ı.	£	н	ı				
Sun Angle H,M,L	Med	Low	E	E	=	£	E	£	E	=				
Fvd 0/1						20	70		99					
incipal Point Fwd at Long o/l	horizon	162.5E	163E	161.5E	161.5E	161E	161E	160E	159.5E	159.5E				
A LI TO	Above h	1N	1.5N	2N	1.5N	1.5N	1.5N	2N	1.5N	0				
Approx. Photo Scale		000,007	=	513,300	000,007	2	E.	E	E	н				
Frame Camera # FL mm	250	E	E	E	E	E	=	=	E	E				
Frame	6339	6340	6341	6342	6343	6344	6345	6346	6347	6348	_			

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7			7

MAGAZINE V (From frames AS11-44-6540 to 6696)

This magazine contains Hasselblad 70mm color pictures (80 and 250mm focal length) of lunar topography before separation of LM and the Command Module, during separation (GET 100:15), during docking, just after TEI (transearth insertion) and pictures of the earth several hours prior to splash-down. Several sequences of lunar topography were taken between the above events, but none were vertical.

Targets of opportunity either fully or partially covered include 15, 35, 36, 43, 46, 47, 50, 53, 55, 57, 61, and 80; a majority of these are high angle obliques.

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Magazine V Film 368 Time Reference - GET = GMT

Description	Near Grater 211, thruster in	Near Crater 211, thruster in focus, limb, TO 46	E	=	Orater 205 left edge, 211 low- er right, limb, TO 46,47	Crater 205, limb TO 47,50	Crater 201 complex near p.p. limb TO 53	Earth on horizon, Mare Smythii Region	n	11	ц	n	ű	u	Ε
Direction Tilt	NE	NE	NE	NE	NE	NE	NW	М	W	М	М	М	М	М	М
Approx. Tilt min max	οε	55 60	55 60	95 60	68	99	65 70	69 59	69 59	69	69 59	69 59	69	69 59	69 59
Photo Quality	Poor	u	11	Good	±	ŧ	Med	Good	н	н	11	14	н	H.	=
Sun Angle H, M, L	н	=	Ħ	±	Ξ	£	=	ı.	#	=	E		11	E	=
ſ	80	80	80	80				%	06	96	%	96	8	06	90
L Point Long deg	117E	119E	119E	121E	119Е	113.5E	106E	87E	86E	86E	85E	85E	85E	85E	85E
Principal Point Fwd Lat Long 0/1 deg deg %	N 70	05.5N	N5.90	N 90	16 N	11.5N	N 70	03 N	N E0	N 60	N 60	N 60	03 N	N EO	03 N
Approx. Photo Scale	1,570,000	2,400,000	H	E	3,600,000	3,300,000	3,400,000	1,300,000	=	E	E	Ε	=	ŧ	Ħ
Camera FL mm	80	E	#	ŧ	E.	H	=	250	E	=	E		E	E	E
Frame #	6540	6541	2759	6543	7759	9759	9759	2759	8759	6759	6550	6551	6552	6553	6554

APOLLO 11 HASSELBLAD PHOTOGRAPHY

= GMT Film 368 Time Reference - GET Magazine V

	T	1]:::
Description	Earth on horizon, Mare Smythii Region	-	Е	П	н	ш	11	#	ц	20 July 1969 GET=100:15; LM, footpeds	±	=	20 July 1969 GET=100:30 IM footpads	Ħ	=	Earth on horizon, Mare Smythii region
Direction Tilt	М	М	М	М	М	М	М	М	3							3
Approx. Tilt min max	65 69	65 69	69 59	75	75	75	75	75	75							75
Photo Quality	Good	ш	#	н	и	ш	н	u	=	E	#	±	=	Poor	Е	Good
Sun Angle H,M,L	High	н	±	#	ı.	=	E	=	=					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		90 Med
Fvd o/1 %	8	96	8	6	8	8	6	90	8							8
Point Long deg	85E	85E	85E													
Principal Lat deg	03N	NEO	03N													
Approx. Photo Scala	1,300,000	E	×													
Camera FL mm	250	E	=	=	=	ε	E	2	=	E	=	=	E	5	Ε	= 2
Frame (#	6555	6556	6557	6558	9959	6561	6562	6959	7959	6969	9959	6567	9959	6959	6570	* 6559 TJ-2007

APOLLO 11 HASSELBLAD PHOTOGRAPHY

Film 363 Time Reference - GET Black and White Magazine V

Description	20 July 1969 GET=100:30; IM footpads	20 July 1969 GET=100:50; IM. space background			H	IM and footpads, poor light- ing, black space background	ш	н	И	н	И	н	н		н
Direction Tilt															
Approx. Tilt min max															
Photo Quality	Poor	ŧ	u	Fair	н	11	H.	11	н	ш	11	H	±	п	=
d Sun l Angle H, M, L											,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
Foint Fw Long o/ deg %															
Principal Point Fwd Sun Lat Long o/1 Angle deg deg % H,M,L								ç							
Approx. Photo Scale															
Frane Camera # FL mm	250	ш	E	ш	11	1	u	11	=		н	ı.		ш	H.
Frame #	6571	6572	6573	6574	6575	6576	6577	6578	6239	6580	6581	6582	6583	6584	6585

APOLLO 11 HASSELBLAD PHOTOGRAPHY

#GMT Magazine V Film 368 Time Reference - GET __

Description	LM very poor light (20 July 1969)	E	Ε	#	=	=	E	E	Ε	#	=	E	=	=	
Direction Tilt															
Approx. Tilt min mex															
Photo Quality	Poor	н	±	и	11	H	Ħ	E	=	=	H	ш	н	и	ц
Sun Angle H, M, L															
0 1 %															
Point Long deg															
Principal Point Fwd Sun Lat Long 0/1 Angle deg deg % H,M,L															
Approx. Photo Scale															
Camera FL mm	250	=	E	E	E .	E	=	=	=	=	=	=	=	E	8
Frame Camera # FL mm	6586	6587	6588	6859	6590	6591	6592	6593	9659	6595	9659	6597	9659	6659	0099

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

	left														
Description	Earth on horizon, Mare Smythii, pp in space, window deposit low	11	=	#	11	Crater 310 in foreground TO 15	Area north of Crater 310	Crater on horizon, edge of 308 on right side TO 15	Crater 308, limb	Orater 309 in background, area 308 in foreground. limb	308, limb	Crater 308 lower left	} of Crater 308 on left, limb	Near Crater 308	Messier B Mare Fecunditatis, Messier,
Direction Tilt	М	М	M	W	W	MS	SE	MS	MS	MS	MS	Ø	SE	S	З
Approx. Tilt min max						60 65	20	55 60	50 55	55 60	95 60	40 45	55 60	55 60	50 55
Photo Quality	Poor	E	- 11	=	ī	Good	=	=	=	Ε	п	=	E	=	=
Sun Angle H,M,L	Н	E	=	=	=	Low	=	=	=	=	=	Med	=	E	E
Fwd o/l.	8	80	80	80	80	၁	0	0	0	0	0	0	0	0	8
1 Point Fwd Long o/1 deg						175W	172.5W	178W	179E	178W	179E	177.5E	178E	174.5E	77Z
Principal Lat deg						085	018	078	570	078	S770	05.58	088	088	3.58
Approx. Photo Scale 1:						900,000	4ف0 , 000	800,000	000,009	300,000	н	560,000	800,000	н	E
Frame Camera # FL mm	80	£	¥	=	#	250	=	ш		=	E	=	E.	#	£
Frame #	6601	6602	6099	7099	5099	9099	6607	8099	6099	6610	6611	6612	6613	6614	6615

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Description	Mare Fecunditatis, Messier Messier B, TO 80	Mare Tranquillitatus, Maskelyne Censorinus, TO 80	=	Mare Tranquitti tatus, Maskelyne Censorinus	atus	Ascent stage of IM, Grater 202 lower left, limb	=	=		Ascent stage of LM, Grater 1999 on right edge TO 55	=	betwe		Ascent stage of LM, oracer 207 on left edge, Mare Smythii	=
Direction Tilt	М	×	¥	м	м	М	B	13	м	M	М	м	М	3	*
Approx. Tilt min max	55 60	65 70	65 70	07	65 75	55 60	09 55	95 60	95 60	25 60	95 60	55 60	25 60	55 60	60 65
Photo Quality	Good	11	¥	ıı	E	=	ı	ŧ	F	=	н	Ε	±	ш	E.
Sun Angle H, M, L	Med	Low	=	E	E	High	11	E	=	£	E	F	=	E	=
F. O	8	20	20	70	50	8	8	30	F	8	8	0 2	2	5	9
Point Long deg	41E	27E	24E	8	19E	105E	105E	104E	103E	102.5E	102E	101.3810	101臣	100.5E	99E
Principal Lat deg	NIO	0.5N	01N	0.5N	OZN	1.5N	1.5N	1.5N	1.5N	1.5N	1.0N	1.0N	1.0N	1.0N	1.0N
Approx. Photo Scale	800,000	1,200,000	E	580,000	1,200,000	2,400,000	E	Ε	=	=	E	=	E•	=	3,200,000
Frame Camera # FL mm	250	=	=	E	=	88	=	E	E	=	=	=	=	=	E
Frame #	6616	6617	6618	6619	6620	6621	6622	6623	6624	6625	9299	6627	9799	6799	999

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Description	Ascent stage of LM, Mare Smythii near horizon	Stage	# # # # # # # # # # # # # # # # # # #	ш	#	=	Ξ	=	=	=	=	=	=	206 and 205 in foreground, Mare Mareinis on limb TO 53 55 57	Mare Marginis & Smythii, Earth
Direction Tilt	N	W	Ŋ	3	Z	¥	ß	W	М	¥	×	Z	Σ	3	3
Approx. Tilt min max	99 09	65 75	65 75	65 75	65 75	65 75	65 75	65 75	65 75	65 75	09	65 75	65 75	45	50
Photo Quality	Good	Poor	=	Good	Fair	=	ŧ.	F	E	=	=	=	E	Good	=
Sun Angle H, M, L	High	E	=	=	=	=	2	E	=	=	=	=	=	=	E
Fwd 0/1	20	20	ಜ	8	8	9	99	9	9	9	3	9	99	28	30
l Point Long deg	396										88E	88E		111E	101E
Principal Point Fwd Lat Long 0/1 deg deg %	1.5N										1.5N	1.5N		N90	05N
Approx. Photo Scale 1:	3,200,000										2,800,000	3,200,000		790,000	800,000
Frame Camera # FL mm	80	=	Ε	#	E	п	=	ı.	=	Ħ	Ħ	ŧ.	E	E	=
Frame #	6631	6632	6633	7699	6635	9699	6637	6638	6639	0799	1799	2799	£799	7799	9999

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

	earth		ê in	1 Turk				ו נו	on 86	south of 8,205,270	n left	, 276 ter TEI	wer		е,
Description	Mare Smythii & Marginis, 201 right lower corner	189 on right edge, Mare Smythii, limb	Mare Smythii, earth, p.p. in	Earth, north edge Mare Smythli limb	Ε	E		Earth, north edge Mare St limb, TO 57, 61, after TI	After TEI, pp near 270; 198 right edge, TO 53,55,57	After TEI,pp about 3 south of 201, other Graters 198,205,270	After TEI, Joliot-Curie on left	Terolkovsky near horizon, 276 on right, TO 35,36,43,after TE	After TEI, Crater 211 Lo right corner, limb	E	Jailot-Curie on left edge,
Direction Tilt	М	М	М	М	3	;3 *	3	M	М	B	NW	SE	NE	NE	NM
Approx. Tilt min max	29	02	70	0/	70	75	75	0,2	O †	0.7					
Photo Quality	Good	Poor	=	Good	11	II	=	=	=	Fair	Good	=	Poor	E	Good
Sun Angle H, M, L	High	=	=	=	E	=	=	E	=	=	=	=	=	=	E
Fwd 0/1	1 ~			20	50	53	55	50	15	15			8	80	
Point Long deg	96E	84E		80E	81瓦			91E	104.5E	108.5E	110E	127E	125E	125E	110E
Principal Lat	05.5N	OZN		03.5N	N90			N70	028	4.5N	NO7	178	17N	17N	30N
Approx. Photo Scale	1,200,000	1,300,000	=	=	=			5,200,000	4,000,000	6,000,000					
Frame Camera # FL mm	80	250	F	E	E	=	=	88	250		8	=	=	=	=
Frame	97799	2799	8799	6799	6650	6651	6652	6653	7599	6655	9999	6657	6658	6699	0999

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APOLLO 11 HASSELBLAD PHOTOGRAPHY

Description	90% of moorfa aphere	E	95% of moon's sphere	Moon's sphere	E	Ė	E	Earth's sphere, terminator,	Earth's sphere, terminator, } illuminated sphere	E	Į.	E	Ľ	E	E
Direction Tilt															
Approx. Tilt min max															
Photo Quality	Good	=	E	ŧ	E	Ε.	E	Poor	=	Good	E	E	=	E	Poor
Sun Angle H, M, L	High	=	=	E	F	=	E	Low	ŧ						
Frd 0/1												<u> </u>			_
Foint Long deg	BCE	79E	70E	65E	65E	68E	57E								
Principal Point Fwd Sun Lat Long 0/1 Angle deg % H,M,L	5N	5N	5N	й6	10N	7.W	N/								
Approx. Photo Scale															
Frame Camera # FL mm	250	=	=	=	=	E	F	=	250	E	=	=	=	E	F
Frame #	6661	6662	6999	7999	6665	9999	1999	8999	6999	0299	1499	6672	6673	7/299	6675

APOLLO 11 HASSELBLAD PHOTOGRAPHY

EWI Film 368 Time Reference - GET Magazine V

Description	Earth, terminator, 1/3 sphere illuminated, sunglint, E. Africa	£	=	E	E	E	E	E	E	-	E	=	E	=	Earth, terminator, Ethiopia, Indian O. 300N to 300S visible
Direction Tilt															
Approx. Tilt min max															
Photo Quality	Good	#	E	=	=	Ε	=	E	E	E	E	£	E	Ε	£
Fwd Sun o/1 Angle % H,M,L															
P.C.															
Point Long deg															
Principal Lat deg															
Approx. Photo Scale															
Frame Camera # FL mm	80	u	±	=	ŧ.	u	u	u	п	ы	и	и	и	u	250
Frame #	9/99	2299	8299	6299	0899	6681	7899	£899	7899	9999	9899	<i>L</i> 899	8899	6899	0699

1 E

APOLLO 11 HASSELBLAD PHOTOGRAPHY

= GMT Film 368 Time Reference - GET Magazine V

Description	Earth, terminator, Ethiopia Indian O. 30 N to30 S visible	=	Earth, terminator	Earth, terminator, view south along E. Africa coast	Earth, terminator, Indian Ocean not visible	Earth, Terminator (poss. forest fire has two distinct	Intense places in about southern Somali), Indian Ocean				
Approx. Direction Tilt Tilt in max											
Approx. Tilt min mex											
Photo Quality	Good	П	±	=	и	u					
Sun Angle H, M, L											
F.vd 0/1 %											
l Point Long deg											
Principal Point Fwd Sun Lat Long o/1 Angle deg & H,M,L											
Approx. Photo Scale											
Frame Camera # FL mm	250	E	=	=	E	u					
Frame #	1699	7699	6699	7699	5699	9699					

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APOLLO 11 SEQUENCE PHOTOGRAPHY (16mm)

There are 13 magazines of 16mm sequence photography with SO 368 and SO 168 film. Five of the magazines contain plottable scenes of the lunar surface. Seven magazines contain photographs of IVA, docking and re-entry. Three magazines contain photography of EVA, which exhibit excellent image quality. The IM descent and ascent photographic sequence produced high quality exposures of the lunar scene.

The majority of the 16mm magazines exposed during the Apollo 11 Mission will be of great value to the scientific community.

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NO. clw 387

APOLLO 11 SEQUENCE PHOTOGRAPHY (16mm)

SO 368
Film
A
Magazine

APOLLO 11 SEQUENCE PHOTOGRAPHY (16mm)

В	
Magazine	

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Remarks	Not plottable.				
Description	IVA - Armstrong, Aldrin, and Collins				
Location					
Frame Number	1–1922				

NO 614 387

NO. clw 387

APOLLO 11 SEQUENCE PHOTOGRAPHY (16mm)

124
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Magazine

168	
တ္တ	
Film	

,	•			 	
Remarks	No plottable scenes.		11-53-		
Description	Sequence of LM undocking from CSM.				
Location					
Frame Number	1–5612				

APOLLO 11 SEQUENCE PHOTOGRAPHY (16mm)

Magazine D F

	
Remarks	Plotted.
Description	Sequence of CSM tracking IM to maneuver for docking. Lunar farside scene of craters 282, 206, 207, 202, 192, 267, and Mare Smythii. Low to high obliques
Location	Sequence from 129.5°E to 85°E
Frame Number	1-5554

NO. clw 387

NO. clw 387

APOLLO 11 SEQUENCE PHOTOGRAPHY (16mm)

Magazine E Film SO 368

	-
Remarks	Not plottable at map scale.
Description	High oblique panoramic photography; photography covering nearly quarter moon. Principal features - Smyth's Sea, Mare Grisium, Langrenus, and Humbolt craters.
Location	
Frame Number	1-5592

APOLLO 11 SEQUENCE PHOTOGRAPHY (16mm)

Magazine F

Frame Number	Location	Description	Remarks
1-659	161 ^o E, 7 ^o S (appro ximately center of sequence)	High to low oblique panoramic sequence of lunar farside. Principal features are craters 300, 301, 302, 304 and 305.	Plotted.
9886	From 20.5°E to 2°W	Sequences starts with low obliques of Sabine, Ritter, and Schmidt, near vertical over Dionysius to Godin, Godin B, Rhaeticus A, low to high obliques of Triesnecker and Agrippa, and ends with low obliques of LLS-3, Blagg and Bruce into terminator.	Plotted.
2887–2976	126°E, 12°N (approximate center of sequence)	High to low oblique panoramic sequence of lunar farside. Prinicpal features are craters 212, 213, 214, and 215.	Plotted.
2977-3075	121 ^o E, 1 ^o N (approximate center of sequence)	High to low oblique panoramic sequence of lunar farside craters 211, 282, and 283.	Plotted.
3076-3186	127°E, 11°N (approximate center of sequence	High to low oblique panoramic sequence of lunar farside craters 210, 212, and 214.	Plotted.
3187-4085	From 127°E to	Low obliques to near vertical sequence of lunar farside craters 208, 211, 213, and 282.	Plotted.
4111-4977	_	Earthrise-high oblique over Mare Smythii - Neper visible.	Not plottable at map scale

NO. clw 387

APOLLO 11 SEQUENCE PHOTOGRAPHY (16mm)

Magazine G Film SO 168

Frame Number	Location	Description	Remarks	
1-429		IVA	Not plottable	
887-067	Not located	IM sequence of CSM, overexposed - lunar scene not identifiable.		
875-687	Sequence from 50.5 E to 47°E	Low oblique to near vertical sequence over the craters Taruntius G and H.	Plotted	
549-1498	Sequence from 32.5 E to 21.5 E	Low oblique to near vertical sequence over Maskelyne, Maskelyne B and G, LLS 2, and Moltke.	Plotted	

NO. clw 387

APOLLO 11 SEQUENCE PHOTOGRAPHY (16mm)

Magazine H

Remarks	Plotted			 	
Description	Sequence photography taken from LM during ascent; from LLS-2 over Sabine, Schmidt past Godin and Godin B.				
Location	Sequence from 23.59 to 6.5 E				
Frame Number	1-4445				

NO. clw 387

NO. clw 387

APOLLO 11 SEQUENCE PHOTOGRAPHY (16mm)

Magazine I Film SO 168

					
Remarks	No plottable scene.	Plotted.	Not plottable.	Plotted.	
Description	Sequence of LM tracking CSM	Sequence of LM descent. High to low oblique from LM window to roll.	LM roll no scene	High to low oblique of LM landing on lunar surface	
Location		Sequence from 44.5 E to 26.5 E		Sequence from 24°E to 23.5°E	·
Frame Number	1-70	71–2398	2399-2636	2637–5565	

APOLLO 11 SEQUENCE PHOTOGRAPHY (16mm)

Magazine J Film SO 168

Remarks	Photography not plottable at map scale.
Description	Initial sequence of photography from IM on lunar surface. Start of EVA - Armstrong down IM ladder onto lunar surface.
Location	Tranquility Base
Frame Number	1–5612

NO. clw 387

APOLLO 11 SEQUENCE PHOTOGRAPHY (16mm)

Magazine K Film SC 168

-		 	 	 	 	
Remarks	Photography not plottable at map scale.					
Description	Sequence of lunar surface EVA (flag, TV - setup).					
Location	Tranquility Base					
Frame Number	1–5610					

NO. clw 387

APOLLO 11 SEQUENCE PHOTOGRAPHY (16mm)

Magazine L

Frame Number	Location	Description	Remarks
1–1648	Tranquility Base.	Sequence from LM on lunar surface after EVA.	Not plottable at map scale.
1649–1833	Not located.	Lunar farside scene sequence from IM - overexposed - scene not identifiable.	Not plotted.
1834-2416	Not located.	Earthrise - overexposed scene not identifiable	Not plottable.
2417–2845		Sequence from LM tracking CSM prior to docking.	No plottable scene.

NO. CLW 387

NASA — MSC — Coml., Houston, Texas

NO. clw 387

APOLLO 11 SEQUENCE PHOTOGRAPHY (16mm)

Σ	
Magazine	

Remarks	No plottable scenes.
Description	Sequence of earth (sunrise/set); re- entry (overexposed). Underexposed - chutes out.
Location	
Frame Number	1–5541

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APOLLO 11 LUNAR CLOSEUP STEREOSCOPIC PHOTOGRAPHY (35mm)

MAGAZINE W (Frames AS11-45-6697 thru 6713)

Magazine W consists of 17 stereoscopic frames of color 35mm film. Each photograph taken by Astronaut Armstrong shows a closeup view of the lunar surface covering an area approximately 72mm x 82.8mm. These photographs appear in "Apollo 11 Preliminary Science Report," NASA SP-214.

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